# Falcon II Outdoor

## Maintenance Manual

Mutoh America Inc.

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# Important Notice

This product has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the product is operated in a commercial environment.

This product generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with this manual, may cause harmful interference to radio communications. Operation of this product in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his expense.

1. Radio interfere

   Product generates weak radio signals and may interfere with television reception and utilities. If a product does interfere with radio or TV reception, try following:

   - Change the direction of your radio and TV reception antenna or feeder.
   - Change the direction of the product.
   - Move either the product or the receiving antenna so there is more distance between them.
   - Be sure the product and the receiving antenna are on separate power lines.

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# 1. SAFETY INSTRUCTIONS

## 1.1. INTRODUCTION

This chapter explains the meaning of safety terms for personnel who operate this equipment, important safety instructions and the positions of the warning labels.

**Important :**

- **Be sure to follow all instructions and warnings in this manual when using the equipment.**

## 1.2. WARNINGS, CAUTIONS AND NOTE

Safety terms in this manual and the contents of warning labels attached to the printer are categorized into the following three types depending on the degree of risk (or the scale of accident).
Read the following explanations carefully, and follow the instructions in this manual.

| Safety terms | Details |
|---|---|
| Important | Must be followed carefully to avoid death or serious bodily injury. |
| Caution | Must be observed to avoid bodily injury (moderately or lightly) or damage to your equipment. |
| Note | Contains important information and useful tips on the operation of your printer. |

## 1.3. IMPORTANT SAFETY INSTRUCTIONS

General safety instructions that must be observed to use the equipment safely are explained below.

### *1.3.1. Warning*

- Do not place the printer in following areas. Doing so may result in the printer falling over and causing injury.
  - Angled place.
  - Areas subject to vibration by other equipment.
  - Do not stand on the printer or place heavy objects on the printer.
- Do not sit on the printer. Doing so may cause the printer to fall and injure people.
- Do not cover the ventilation hole of the printer with cloth, such as a blanket or table cloth. Doing so could obstruct ventilation and cause fire.
- . Do not place the printer in humid and dusty areas. Doing so may result in electrical shock or fire.

- . Be sure that the following is performed before replacing parts.
  - Turn the printer off.
  - Disconnect the power cable from the electric outlet. Not doing so may cause electric shock or damage to the electric circuit.
  - Unplug the cables connected to the printer.

## *1.3.2. Caution*

- Assembling and disassembling the printer are possible only for the parts shown in the operation manual. Do not disassemble any frame parts or parts of which disassembling procedures are not shown in the manual. Doing so may cause trouble that cannot be restored, as the printer is originally assembled in the factory with a high accuracy of 1/100 mm.

- Do not touch the elements on the circuit board with bare hands. Doing so may cause static electricity and break the elements.

- . Do not press down the transparent film on the sides of the damper assembly with your hands. The damper assembly is filled with ink and pressing on the film will make the ink spurt out.

- Be careful not to scratch the transparent film on the sides of the damper assembly.

- . Be careful not to touch the surface of the print head's nozzles or to let dirt adhere to them.

- . There is some remaining ink in the tubes. Be careful that the ink is not spilled from the tube onto the printer or objects close to the printer.

- . If you need to operate the printer with the cover removed for maintenance, be careful not to get hurt by the moving parts.

- Do not oil the printer mechanism with oil other than the oil designated by MUTOH. Doing so may damage the parts or shorten the lifetime.

- . If the power substrate assembly needs to be removed, disconnect the power cable and wait for at least 5 minutes before taking it out. This will discharge the residual electrical charge of the electrolytic capacitor. Touching the substrate before the capacitor discharges may cause electric shock.

- When connecting or disconnecting the FFC type cable from the connector of the main substrate assembly, be sure to connect or disconnect the cable straight out from the connector. Connecting or disconnecting at a slant angle may damage, break or short-circuit the inner terminal of the connector. That may damage the elements on the substrate.

- When connecting or disconnecting the FFC type cable from the connector of the CR substrate, be sure to connect or disconnect the cable straight out from the connector. Connecting or disconnecting at a slant angle may damage, break or short-circuit the inner terminal of the connector. That may damage the elements on the substrate.

- . Before replacing parts, be sure to adjust the capping position. When the capping position adjustment has not been implemented, the cleaning position and other operational positions can exit the alignment and normal operations become impossible.

- Pay attention to the following points when performing the cutter endurance operation.
  - . Install an available ink cartridge.
  - . Make sure that media initialization has been completed.

- . Make sure that the power of the printer is OFF before performing the parameter backup. Performing the parameter backup with the power ON may damage the main substrate or data may not be properly installed.

- . Make sure that the power of the printer is OFF before installing the firmware. Installing the firmware with the power ON may damage the main substrate assembly or data may not be properly installed.
- . Ensure there is sufficient space around the printer when performing maintenance work.
- . Maintenance must be done by more than one person for :
  - detaching the printer from the stand or attaching it.
  - packing the printer for transportation.

# 1.4. WARNING LABELS

The handling, attachment locations, and types of warning labels are explained below.
Warning labels are attached to areas to which attention should be paid. Read and understand the positions and contents thoroughly.

## *1.4.1. Handling the operation procedure labels*

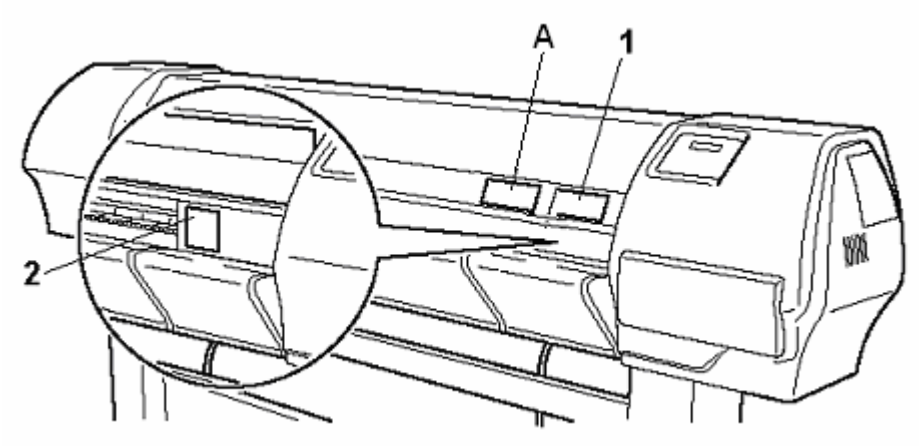
Notes :

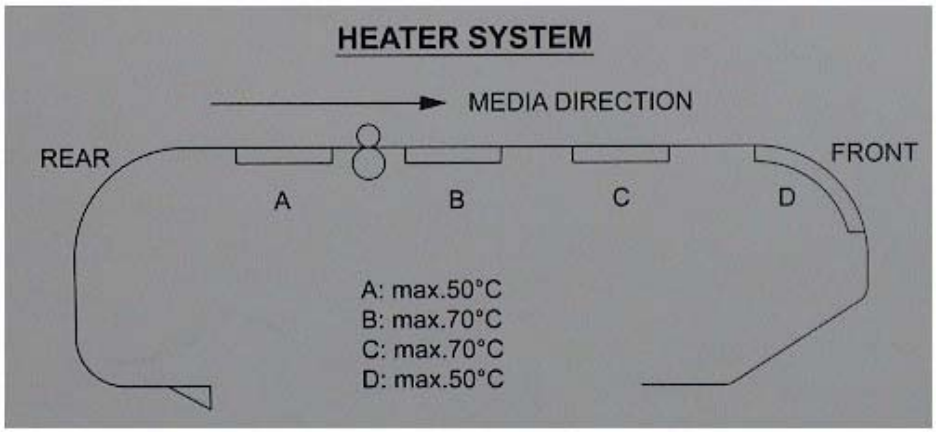
- Make sure that all labels can be recognized. If text or illustrations are invisible, clean or replace the label.
- When cleaning labels, use a cloth with water or neutral detergent. Do not use a solvent or gasoline.
- If a warning label has been damaged, lost or cannot be recognized, replace the label.

## *1.4.2. Locations and types of operation procedure labels*

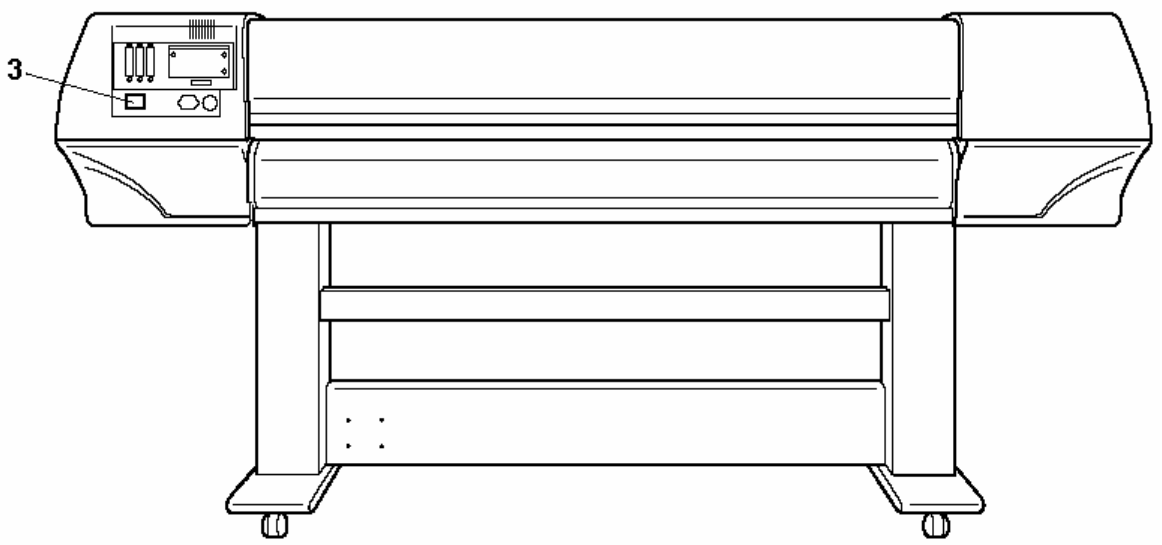
The locations of warning labels are shown below.

### *(1) Front Part*



| No. | Type |
|---|---|
| 1 | **CAUTION VORSICHT ATTENTION**<br>> Do not open the front cover or touch the media during printing.This will result in poor image quality.<br>> If no printing is to be done for some time, remove the media and put the hold lever in the up position. Otherwise the media may lift up and become wrinkled and you will not be able to obtain good printing results.<br><br>> Öffnen Sie wärhend des Druckens die Frontabdeckung nicht und berühren Sie das Druckmaterial nicht.<br>> Wenn Sie wärhend längere Zeit den Drucker nicht benutzen, nehmen Sie das Druckmaterial heraus und stellen Sie den Halthebel in die obersten Position. Sonst kann sich das Druckmaterial aufheben und zerknittern und demzufolge erzielen Sie keine gute Druckergebnisse mehr.<br><br>> N'ouvrez pas le couvercle quand l'imprimante est en train d'imprimer. Ne touchez pas non plus le papier afin d'éviter que la qualité s'aggrave.<br>> Si vous ne comptez pas imprimer pendant un certain temps, retirez le papier et mettez le levier en position levée. Sinon, le support risque de se soulever et de se froisser et vous n'obtiendrez pas de bonne qualité d'impression. |
| 2 | Only on a Falcon II Outdoor 2H printer<br>**CAUTION VORSICHT ATTENTION**<br> <br>> To avoid injury, keep fingers away from the cutter blade.<br><br>> Um Verletzungen zu vermeiden, berühren Sie das Schneidemesser nicht.<br><br>> Ne touchez pas la lame afin d'éviter des blessures.<br> <br><br>> To avoid injury, do not touch the edge of the steel belt.<br><br>> Um Verletzungen zu vermeiden, berühren Sie den Stahl-Antriebsriemen nicht .<br><br>> Ne touchez pas la courroie de transmission en acier afin d'éviter des blessures. |
| A | Only on a Falcon II Outdoor 4H printer<br>  <br> |

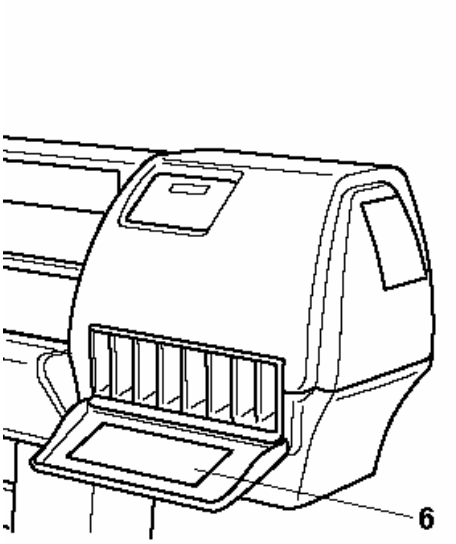
## *(2) Back Part*




| No. | Type |
|---|---|
| 3 | **CAUTION**<br>THIS UNIT HAS TWO POWER SUPPLY CORDS, WHEN WiNDING□<br>UNIT IS PROVIDED. TO REDUCE THE RISK OF ELECTRICAL□<br>SHOCK, DISCONNECT ALL POWER SUPPLY CORDS □<br>BEFORE SERVICING. |

# 1.5. OPERATION PROCEDURE LABELS

The handling, attachment locations and types of operation procedure labels are explained below.
Your printer has labels, which give simple explanations of operations that require particular care. Read and understand the locations and contents of these labels thoroughly before performing your work.




| No. | Type | Refer to |
|---|---|---|
| 6 | Number of the Colours / Ink Type / Slot Number of Ink Cartridge (1–8)<br>4 — Eco Solvent 2x4 colours: Black, Yellow, Cyan, Magenta, Magenta, Cyan, Yellow, Black<br>6 — Eco Solvent 1x6 colours: Black, Cyan, Transition Liquid, Transition Liquid, Yellow, Magenta, Light Cyan, Light Magenta | → Refer to the User's Guide "Installing ink cartridges"<br><br>Please note that ink cassettes order is different for 87" printers versus 50" and 64" printers.<br><br>(Label 50" and 64" printer) |
| 6 | Number of the Colours / Ink Type / Slot Number of Ink Cartridge (1–8)<br>4 — Eco Solvent 2x4 colours: Black, Cyan, Magenta, Yellow, Black, Cyan, Magenta, Yellow<br>6 — Eco Solvent 1x6 colours: Black, Cyan, Transition Liquid, Transition Liquid, Yellow, Magenta, Light Cyan, Light Magenta | → Refer to the User's Guide "Installing ink cartridges"<br><br>Please note that ink cassettes order is different for 87" printers versus 50" and 64" printers.<br><br>(Label 87" printer) |

# 2. PRODUCT OVERVIEW

## 2.1. INTRODUCTION

This chapter explains the features, part names, and functions of the printer.

## 2.2. FEATURES

The features of the printer are explained below.

### *(1) High speed output*

Both models feature new print heads and achieve high speed printing.
They also offer printing widths up to 1263 mm in 50-inch, 1643 mm in 64-inch and 2230 mm in 87-inch spec possible.

### *(2) Wide variety of compatible media*

Adjustable head height can adapt to various media thickness from 0.08 up to 1.1 mm.

### *(3) Vibrant Colour Reproduction*

To reproduce sharp and vivid colour, 4, 6 and 8 ink colours are used for printing. The 220ml large capacity ink tank is equipped with an IC chip. This unit can automatically detect the ink quantity, significantly improving productivity.

### *(4) Effective usage of media*

A JOG feature is provided to allow setting of the printing position as required. Because printing can be performed on media on which was already printed, excess space can be used effectively.

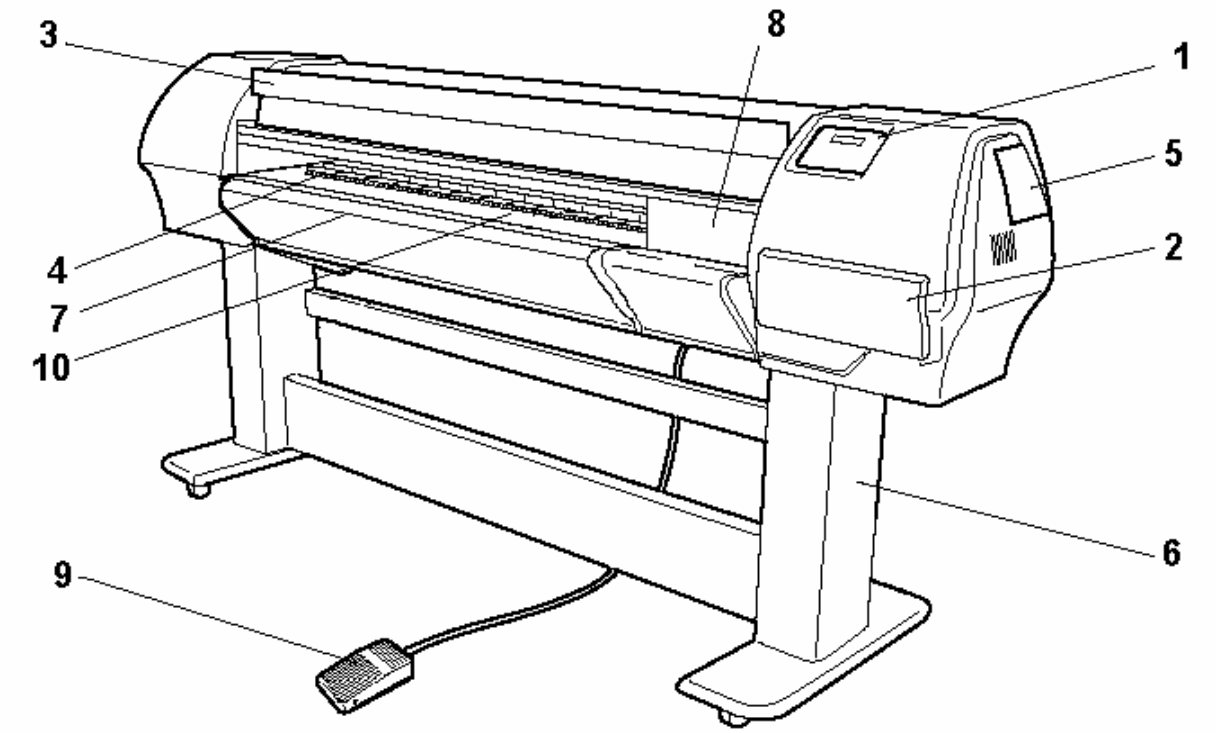
### *(5) RIP*

Software Starter Pack included in-the-box. (To be defined with the order.)

# 2.3. PART NAMES AND FUNCTIONS

Part names and functions are explained below.

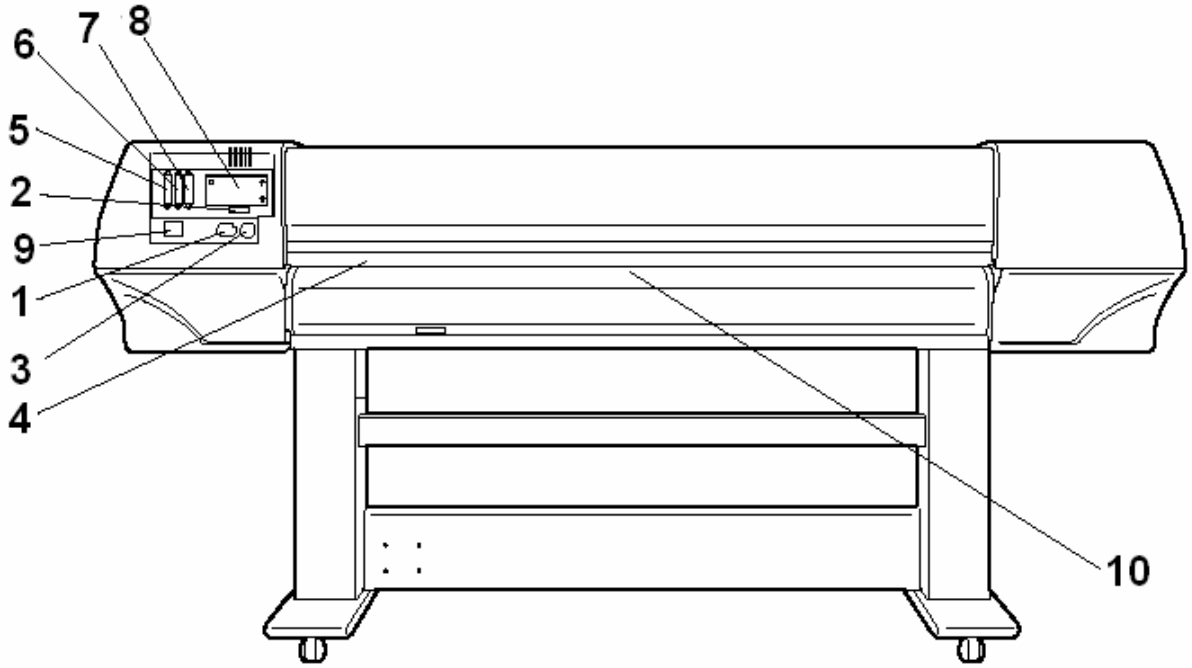
## *2.3.1. Front*




| No. | Name | Function |
|---|---|---|
| 1 | Operation panel | This panel is used to set operational conditions, the status of the printer, and other functions. |
| 2 | Ink compartment | This is the place for installing ink cartridges. |
| 3 | Front cover | This cover keeps the operator safe from the drive parts of the printer while it is operating. Only open and/or close the cover to perform following operations:<br>➢ Media setting and replacement<br>➢ Cutter blade replacement<br>➢ Cleaning the cleaning wiper<br>➢ In case of media jam. |
| 4 | Pressure rollers | This roller is used to press the media from above and keep it flat when printing. |
| 5 | Maintenance cover | This protects users from electric shocks caused by touching the internal electrical parts. The cover is opened when expansion memory (optional) has to be installed, and is closed for normal use. |
| 6 | Stand | This stand is used to install the printer on a surface flat floor.<br>The following options are available for installation.<br>➢ Take-up system + scroller receiver<br>➢ Motorized roll-off / roll-up system |

| | | |
|---|---|---|
| 7 | Media cut groove | Only onto the Falcon II Outdoor 4H printer !<br>Used to cut the media straight when it is cut manually. |
| 8 | Carriage cover | Only onto the Falcon II Outdoor printer !<br>This is a cover to protect the user from the internal components of the unit. This is opened during following operation :<br>➢ When cleaning the cleaning wiper |
| 9 | Foot switch | This switch is used to raise and lower the pressure rollers. |
| 10 | Paper Guide | Support the media during printing<br>In the Falcon II Outdoor it houses post-heater (dryer).<br>In the Falcon II Outdoor 4H it houses the fixer, post-fixer and dryer. |

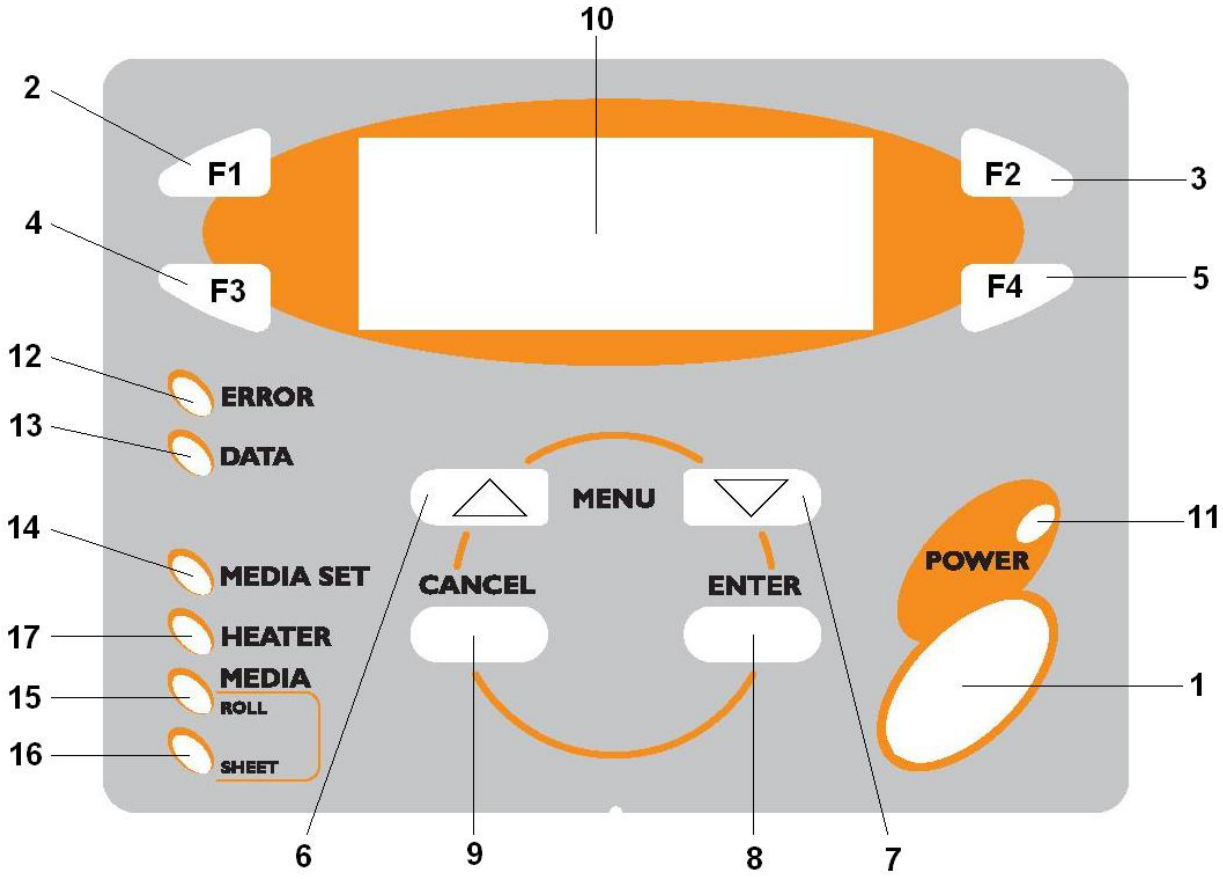
## ***2.3.2. Back***




| No. | Name | Function |
|---|---|---|
| 1 | AC inlet | This is the inlet interface to which the power plug is connected. |
| 2 | Interface connector | This is the connector to which the interface cable is connected. |
| 3 | Foot switch connector | This is the connector to which the foot switch cable is attached. |
| 4 | Insertion slot | This is the slot for inserting media when loading it. |
| 5 | Interface slot 1 | The network interface board attaches here. |
| 6 | Interface slot 2 | This is not used for this printer.<br>Close it with the cover. |
| 7 | Interface slot 3 | |
| 8 | Hard disk slot | The hard disk attaches here. When not using a hard disk, keep the cover closed. |
| 9 | Nameplate rating | The type, name, serial number, rating and other details of the printer are labelled here. |
| 10 | Rear Heater | Supports the media during printing and houses the pre-heaters. |

## 2.3.3. Operation panel

The operation panel is used to set operation conditions, display the status of the printer and set other functions. The names and functions of the operation keys and status lamps are explained below.




### (1) Operation Keys.

| No. | Name | Normal | Setup menu display |
|---|---|---|---|
| 1 | [POWER] key | Turns the printer on and off. | Turns the printer on and off. |
| 2 | [F1] key | Executes the function assigned to F1. | Executes the function assigned to F1. |
| 3 | [F2] key | Executes the function assigned to F2. | Executes the function assigned to F2. |
| 4 | [F3] key | Executes the function assigned to F3. | Executes the function assigned to F3. |
| 5 | [F4] key | Executes the function assigned to F4. | Executes the function assigned to F4. |
| 6 | [MENU ↑] key | Changes the LCD monitor display to setup menu status. | Changes the menu in reverse order. |
| 7 | [MENU ↓] key | Changes the LCD monitor display to setup menu status. | Changes the menu in forward order. |
| 8 | [ENTER] key | Displays the print mode currently set. | Determines the new parameter value and changes the LCD monitor display to the next menu. Sets the parameter value and changes the LCD monitor display to the next menu. |
| 9 | [CANCEL] key | - | Cancels the new parameter value and changes the LCD monitor display to the next menu. Clears the parameter value and changes the LCD monitor display to |

| | | | |
|---|---|---|---|
| | | | the next menu. |

*(2) LCD monitor and status lamps.*

| No. | Name | Colour | Status | Function |
|---|---|---|---|---|
| 10 | LCD monitor | - | - | The monitor displays the operation status and error messages of the printer. |
| 11 | POWER lamp | Green | ON | The printer is on. |
| | | | OFF | The printer is off. |
| 12 | ERROR lamp | Red | Flashing | An error has occurred. The contents will be displayed on the LCD monitor. |
| | | | OFF | Either there is no error or the power is off. |
| 13 | DATA lamp | Orange | ON | The printer is receiving print data. |
| | | | Flashing | The printer is analysing receiving data. |
| | | | OFF | The printer is waiting to receive print data. |
| 14 | MEDIA SET lamp | Orange | ON | ➢ The pressure rollers are in the release position.<br>➢ Media is not set. |
| | | | OFF | ➢ The pressure rollers are in secured position.<br>➢ The media is set. |
| 15 | ROLL lamp | Orange | ON | The media type is set to roll media. |
| | | | OFF | The media type is set to sheet media. |
| 16 | SHEET lamp | Orange | ON | The media type is set to sheet media. |
| | | | OFF | The media type is set to roll media. |
| 17 | HEATER lamp | Orange | ON | The temperature of the heating elements is the requested temperature.<br>The real temperature is the same as the requested temperature. |
| | | | Flashing | The heating elements are warming up.<br>The real temperature is different as the requested temperature. |
| | | | OFF | The heating elements are powered OFF. |

# 2.4. PRINTER STATUS

The status of the printer is explained below.

## *2.4.1. Normal*

Indicates that the printer can print when media is loaded.
You can also make settings using the operation panel.

Notes :

➢ Refer to the User's Guide.

## 2.4.2. Setup menu display

Indicates that you can make settings using the operation panel.
Operations for printing can be conducted with the operation panel.

Notes :

- Refer to the User's Guide.

## 2.4.3. Self-diagnosis Function Display

Indicates that you can make settings concerning adjusting the printer using the operation panel. Keys of the operation panel have the same names and functions as the display status of the setup menu.

Notes :

- Refer to the chapter "Self-Diagnosis function".

## 2.4.4. Maintenance Mode Display

Indicates that you can make settings concerning the life of the printer. Keys of the operation panel have the same names and functions as the display status of the setup menu.

Notes :

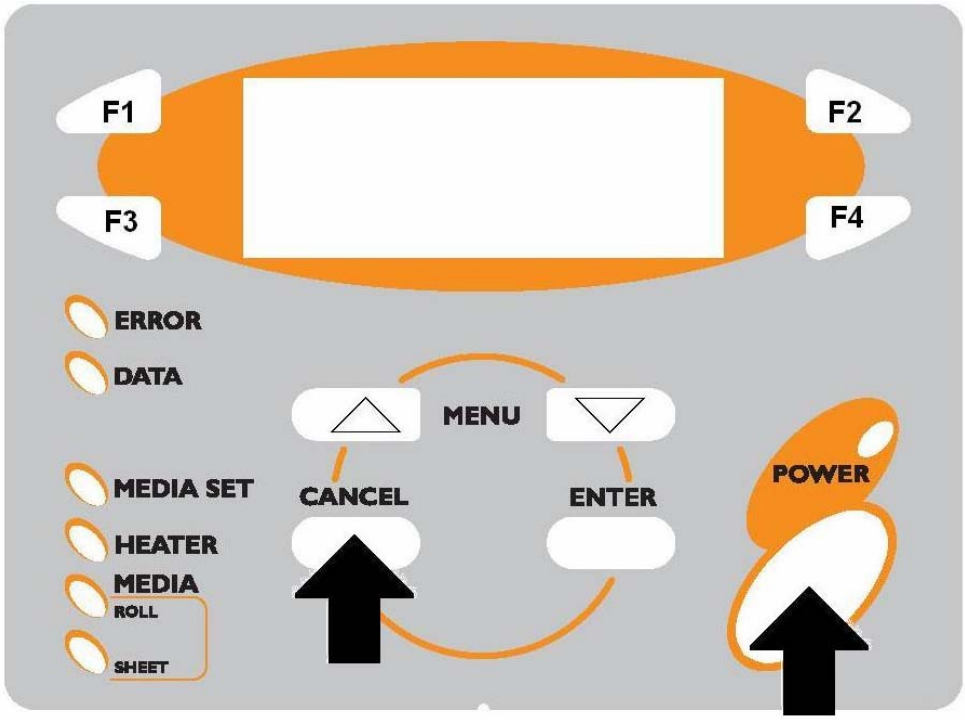
- Refer to the chapter "Maintenance mode".

## 2.4.5. Selecting Language

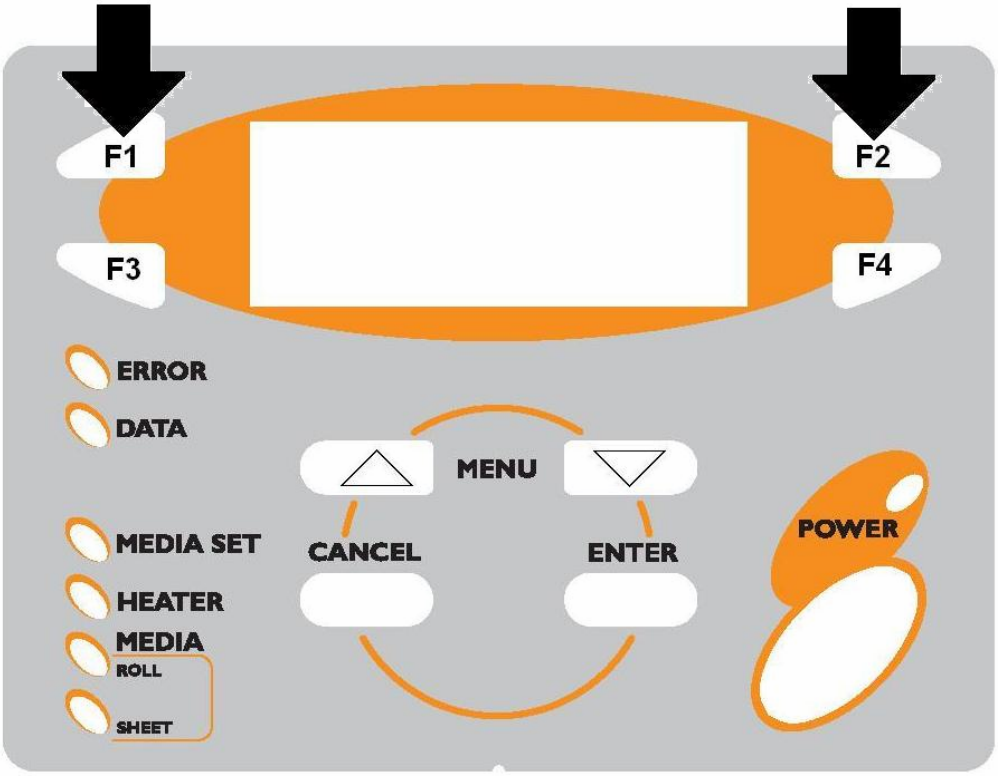
This chapter explains how to select the language on the display.
Japanese or English is selectable for the display language of the printer.

Follow the steps below to select the display language.

**Step 1 :** Press the [POWER] key while pressing the [CANCEL] key on the operation panel.



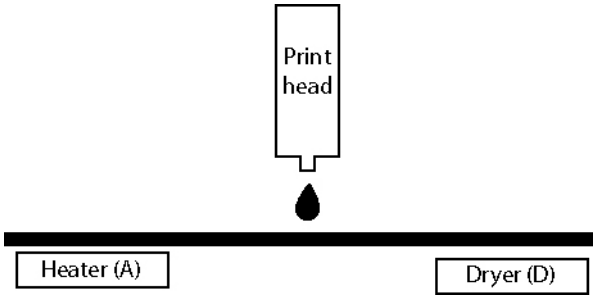

**Step 2 :** Press the [F1] key or [F2] key on the operation panel to change the parameter.




**Step 3 :** Press the [POWER] key, and then press the [POWER] key again.

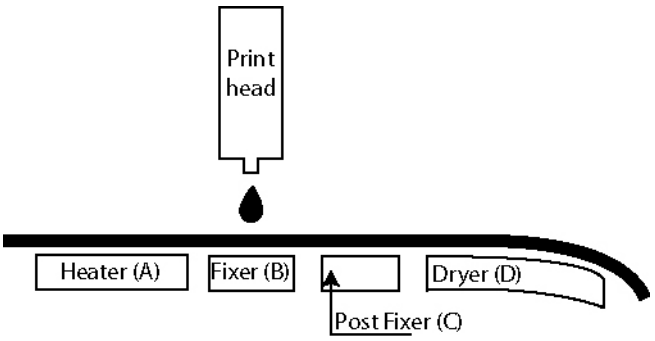
# 2.5. POSITION AND FUNCTION OF THE HEATING ELEMENTS

## *2.5.1. Falcon II Outdoor 2 heater printers*




| Heater element | Temperature | Function |
|---|---|---|
| Pre-heater (Heater A) | 20 – 50°C | → Open the pores to make the media more receptive for eco-solvent or eco-solvent plus™ ink. |
| Dryer (Heater D) | 20 – 50°C | → Applying heating immediately after printing improves ink/media anchorage.<br>→ The dryer helps to make the media touch-dry before it reaches the automatic take-up system. |

## *2.5.2. Falcon II Outdoor 4 heater printers*




| Heater element | Temperature | Function |
|---|---|---|
| Pre-heater (Heater A) | 20 – 50°C | → Open the pores to make the media more receptive for eco-solvent or eco-solvent plus™ ink. |
| Fixer (Heater B) | 20 – 70°C | → To establish optimum fixation onto the media (coated and uncoated).<br>→ Optimizes the dot gain control. |

| | | |
|---|---|---|
| Post-Fixer (Heater C) | 20 – 70°C | → The post-fixer finalizes the fixation process and helps to make the prints touch-dry. |
| Dryer (Heater D) | 20 – 50°C | → The dryer completes the drying for compatibility with the take-up in combination with higher output speeds.<br>→ Stickiness of printed banner materials is improved. |

## ***2.5.3. 2 or 4 heater***

To verify if your printer is equipped with 2 or 4 heaters, please refer to the photo's mentioned below.

**Falcon II Outdoor 2 heater printer**

**Falcon II Outdoor 4 heater printer**

# 3. SPECIFICATIONS

## 3.1. INTRODUCTION

This section explains the specifications, optional parts and supplies, installation procedures for optional parts, and user support for this printer.

## 3.2. PRODUCT SPECIFICATIONS

| **Printers** | | **50"- model** | **64"- model** | **87"- model** | |
|---|---|---|---|---|---|
| Technology | | Drop-on-demand Micro Piezo Inkjet Technology.<br>Variable drop mass output between 5.4 ng and 41.5 ng | | | |
| Media Thickness Compensation | | Automatic media thickness compensation.<br>Variable – RIP controlled – Head Height | | | |
| Maximum Media Widths | | 1273 mm | 1653 mm | 2240 mm | |
| Maximum Print Widths | | 1263 mm | 1643 mm | 2230 mm | |
| Media | Thickness<br>Diameter / Core<br>Weight | Range: 0.08 mm – 1.1 mm<br>Maximum: 150 mm / 2" or 3"<br>Maximum: 50 kg | | | |
| Colour Channels | | 8 colour channels – 4 or 6 process colour output | | | |
| Inks | | Eco-Solvent (Plus) 2xCMYK speed set-up<br>Eco-Solvent (Plus) CMYKLcLm photo tone rendering set-up | | | |
| Ink Cassette Capacity / Type | | 220 ml / smart chip ink type & order sensing | | | |
| Print Modes & Panel Control Options | | Uni & Bi-directional output, Interweaving, Mirror Output, Multi Copy, Ink Status, Origin Control | | | |
| Speed Overview Table ( * )<br>914mm (36") wide output | | 50 & 64 | | 87 | |
| Ink Set-Up | | 2 x 4 Colours | 6 Colours | 2 x 4 Colours | 6 Colours |
| 360 x 360<br>○○○ ○ | | 5.7 – 37.7 | 2.9 – 19.6 | 5.7 – 37.7 | 3.9 – 27.7 |
| 720 x 360<br>○ | | 5.8 – 22.8 | 2.9 – 11.5 | 5.9 – 23.1 | 5.3 – 20.6 |
| 720 x 720<br>○○○ ○ | | 2.9 – 11.4 | 1.4 – 5.6 | 2.9 – 11.5 | 2.6 – 10.2 |
| 1440 x 720<br>○ | | 2.9 – 5.9 | 1.4 – 2.8 | 3.0 – 6.0 | 2.6 – 5.2 |
| 1440 x 1440<br>○ | | 1.4 – 2.9 | 0.7 – 1.5 | 1.5 – 3.0 | 1.3 – 2.6 |
| Output speeds are given for 914 mm (36") output.<br>50" output is 7 % faster, 64" output is 12 % faster and 87" output is 18 % faster.<br>For each mode, the minimum (Super High Quality) and maximum speed (Super Draft) are given.<br>Mode dependent, there are between 2 and 6 speed levels per mode, accessible via print direction selection and interweave control from the RIP software.<br>Top speeds indicated are super draft modes and do not guarantee production output quality on all media types.<br>○○○ Variable Drop Compatible ○ Fixed Drop Compatible | | | | | |
| LCD Display | | Backlight LED – 4 lines x 20 characters | | | |
| Take-up System (standard) | | Automated | | | |
| Roll Media Core | | 2" & 3" | | | |

| | |
|---|---|
| Interface | Centronics, IEEE 1284 compatible / Network, High Speed Interface (standard high-speed interface card – 4 Mb/s). |
| Graphics Command Language | RTL-PASS, MH-GL, MH-GL/2 |

| **Printers** | **50”- model** | **64”- model** | **87”- model** |
|---|---|---|---|
| Power Consumption | 1100 VA<br>80 VA in stand-by mode | 1300 VA<br>80 VA in stand-by mode | 1400 VA<br>100 VA in stand-by mode |
| External Dimensions in mm (W x D x H)<br><br>Weight | 2700 x 750 x 1250<br><br>170 kg | 3100 x 750 x 1250<br><br>195 kg | 3700 x 750 x 1250<br><br>215 kg |
| Noise Level | Operating: 54 dB or less | | |
| Standard | VCCI (Class A), FCC (Class A), UL, CE, CCIB | | |
| Standard Items | Hard Disk: 20.3 GB – Stores 16 jobs – Up to 99 copies/job – PostScript RIP included | | |
| Optional Item | Extra Scroller Bars – Take-up System – Roll-off / roll-up system | | |

| | | |
|---|---|---|
| Area | 50” model | 11.7 m² or larger. Frontage of 4.3 m or greater. |
| | 64” model | 12.7 m² or larger. Frontage of 4.7 m or greater. |
| | 87” model | 14.3 m² or larger. Frontage of 5.3 m or greater. |
| Floor loading capability | | 2490Pa (300kg/m²) or over |
| Electrical | Voltage | AC100V - 120V or AC220V – 240V |
| | Frequency | 50/60Hz±1Hz |
| | Capacity | AC100V - 120V: 3A or more<br>AC220V - 240V: 1.5A or more |
| Environmental | Recommended working environment | Temperature: 25°C<br>Humidity: 40% to 60%, without condensation |
| | Operational conditions | Temperature: 18°C to 35°C<br>Humidity: 40% to 60%, without condensation |
| | Rate of change | Temperature: No more than 2°C per hour<br>Humidity: No more than 5% per hour |
| | Storage environment | Temperature: -20°C to 60°C<br>Humidity: 5□ to 85%, without condensation (When ink has been discharged.) |

Specifications are liable to changes without prior notice. All trademarks mentioned are property of their respective owners.

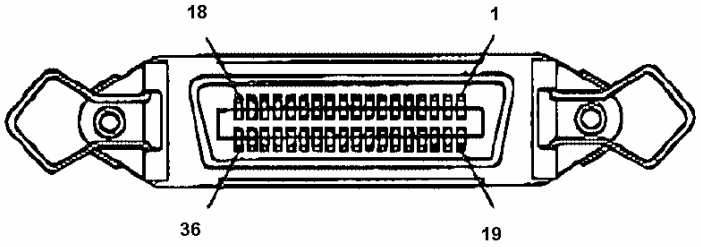
# 3.3. INTERFACE SPECIFICATIONS

This section explains the specifications for the interfaces supported by this product.

## *3.3.1. Centronics Bidirection Parallel Interface:IEEE1284)*

### *(1) Interface Specifications*

AP-74065, Rev : 1.0, 21/11/2003

| Item | Specifications |
|---|---|
| Transmission modes | Compatible , Nibble , ECP Mode |
| Data length | 8 bits |
| Transmission direction | Unidirectional (receiving only), Bidirectional |
| Connector pin number |  |

### *(2) Table of parallel interface pin numbers and signals*

| Pin number | Connection signal | Signal direction | Pin number | Connection signal | Signal direction |
|---|---|---|---|---|---|
| 1 | STROBE | To printer ← | 19 | SG | |
| 2 | DATA1 | To and from printer ← → | 20 | SG | |
| 3 | DATA2 | To and from printer ← → | 21 | SG | |
| 4 | DATA3 | To and from printer ← → | 22 | SG | |
| 5 | DATA4 | To and from printer ← → | 23 | SG | |
| 6 | DATA5 | To and from printer ← → | 24 | SG | |
| 7 | DATA6 | To and from printer ← → | 25 | SG | |
| 8 | DATA7 | To and from printer ← → | 26 | SG | |
| 9 | DATA8 | To and from printer ← → | 27 | SG | |
| 10 | ACK | From printer → | 28 | SG | |
| 11 | BUSY | From printer → | 29 | SG | |
| 12 | P ERROR | From printer → | 30 | SG | |
| 13 | SELECTED | From printer → | 31 | INIT | To printer ← |
| 14 | AUTOFD | To printer ← | 32 | FAULT | From printer → |
| 15 | Not connected | | 33 | Not connected | |
| 16 | SG | | 34 | Not connected | |
| 17 | FG | | 35 | Not connected | |
| 18 | +5V | | 36 | SELECTIN | To printer ← |

### *(3) Recommended Centronics cable specifications*

| Item | Specifications |
|---|---|
| Interface | Dual-direction Parallel Interface:IEEE1284 |
| Structure | AWG28×18 (twisted pair wiring) |

| | |
|---|---|
| Shield construction | Metallic tape + weaving (double shielded cable) |
| Characteristic impedance | 62 Ω |

## 3.3.2. Network Interface (Optional) Specifications

| Item | Specifications |
|---|---|
| NetWork Type | Ethernet IEEE802.3 |
| NetWork I/F | 10 Base-T,100 Base-TX<br>(RJ-45 connector, twisted pair cable)<br>* Automatic switching |
| Protocol | TCP/IP |
| Mode | • ftp<br>• lpr<br>• socket |
| Functions | • Automatic protocol recognition<br>• Transmission speed up to 4 MB/s<br>• Network environment setting by Web. |

# 3.4. INSTALLATION

The Installation of the unit is explained below.

## *3.4.1. Conditions of the installation environment*

**Important :**

- **Do not place the printer in following areas. Doing so may result in the printer falling over and causing injury.**
  - **Unstable surfaces**
  - **Slanted place**
  - **Where vibration of other machines is transmitted.**
- **Do not sit on the printer or put heavy things on the printer. Doing so may cause the printer to fall and injure people.**
- **Do not cover the ventilation hole of the printer with cloth, such as a blanket or table cloth. Doing so could obstruct ventilation and cause fire.**
- **Do not place the printer in humid and dusty areas. Doing so may result in electrical shock or fire.**

*(1) Conditions of the installation environment*

Select the place to install this unit according to the environmental condition in the table below.

| | | |
|---|---|---|
| Area | 50” model | 11.7 m² or larger. Frontage of 4.3 m or greater. |
| | 64” model | 12.7 m² or larger. Frontage of 4.7 m or greater. |
| | 87” model | 14.3 m² or larger. Frontage of 5.3 m or greater. |
| Floor loading capability | | 2490Pa (300kg/m²) or over |
| Electrical | Voltage | AC100V - 120V or AC220V – 240V |
| | Frequency | 50/60Hz±1Hz |
| | Capacity | AC100V - 120V: 3A or more<br>AC220V - 240V: 1.5A or more |
| Environmental | Recommended working environment | Temperature: 25°C<br>Humidity: 40% to 60%, without condensation |
| | Operational conditions | Temperature: 18°C to 35°C<br>Humidity: 40% to 60%, without condensation |
| | Rate of change | Temperature: No more than 2°C per hour<br>Humidity: No more than 5% per hour |
| | Storage environment | Temperature: -20°C to 60°C<br>Humidity: 5□ to 85%, without condensation (When ink has been discharged.) |

Notes :

- Avoid the following places with regard to temperature or humidity. If doing so, it may affect the printing result.
  - Places where the temperature of humidity may rapidly change even though it is within the correct range.
  - Places where there is direct sunlight or strong light.
  - Places where there is direct air from the air conditioner.
- It is recommended to install the printer in an environment where the air conditioning is adjustable for temperature and humidity.

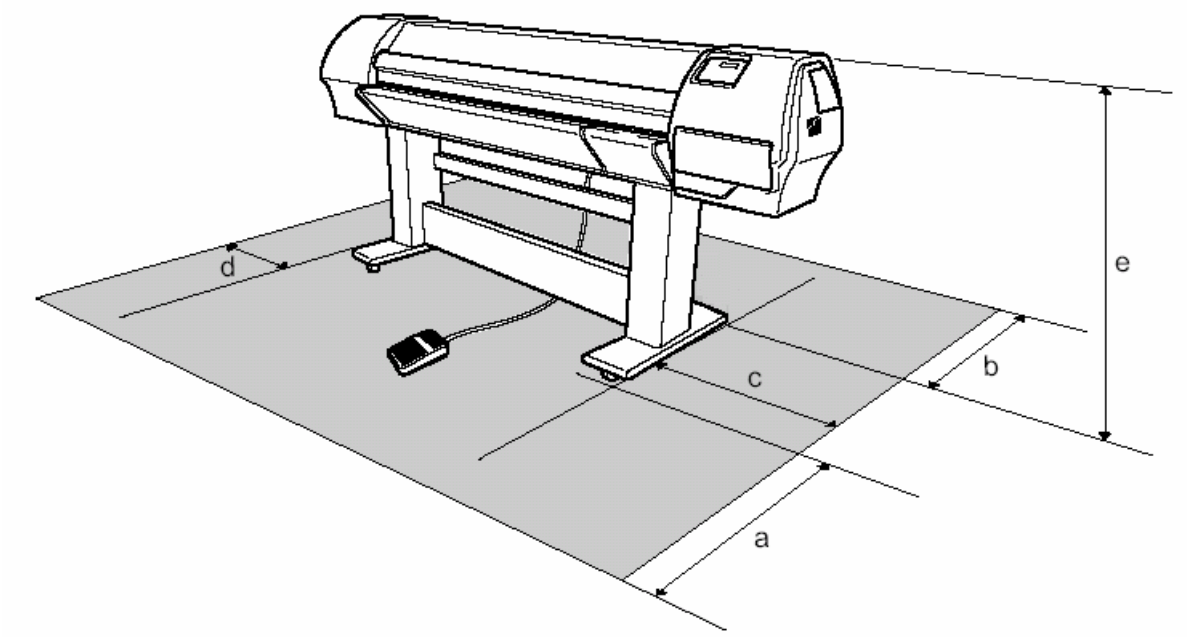
*(2) Installation space*

Install on a horizontal place that satisfies following conditions.

- The floor has the sufficient strength to sustain the weight of the printer and the stand.

Notes :

- Refer to 'product specifications'.



# 4. PARTS REPLACEMENT

## 4.1. INTRODUCTION

This chapter explains the procedures for replacing and removing maintenance parts.

**Important :**

- **Before replacing parts, be sure to perform following operations.**
  - **Turn the power OFF.**
  - **Remove the electrical cable from the socket. Otherwise, you may suffer electric shock or the machine's electric circuits may be damaged.**
  - **Disconnect all cables from the machine. Not doing so could cause damage to the printer.**

**Caution :**

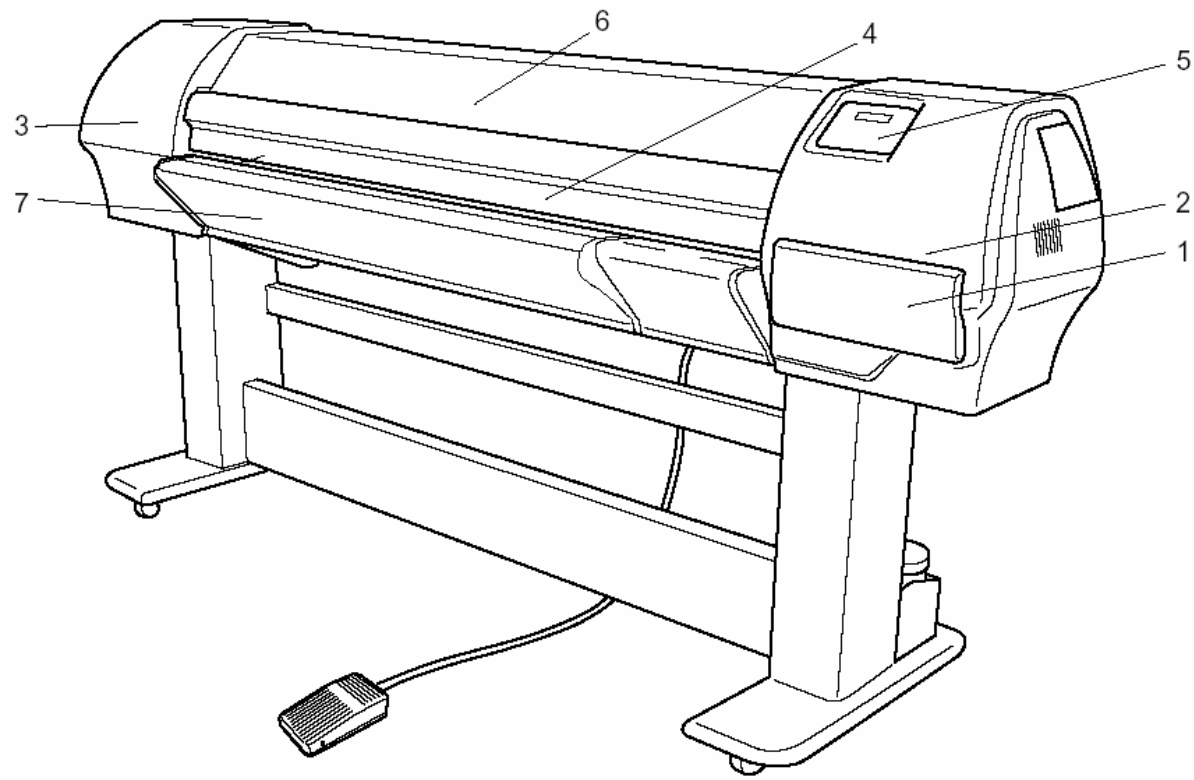
Assembling and disassembling the printer are possible only for the parts for which disassembling procedures are shown in the operation manual.
Do not disassemble any frame parts or parts for which disassembling procedures are not shown in the manual.
Doing so may cause trouble that cannot be restored, as the printer is originally assembled in the factory with a high accuracy of 1/100 mm.

Notes :

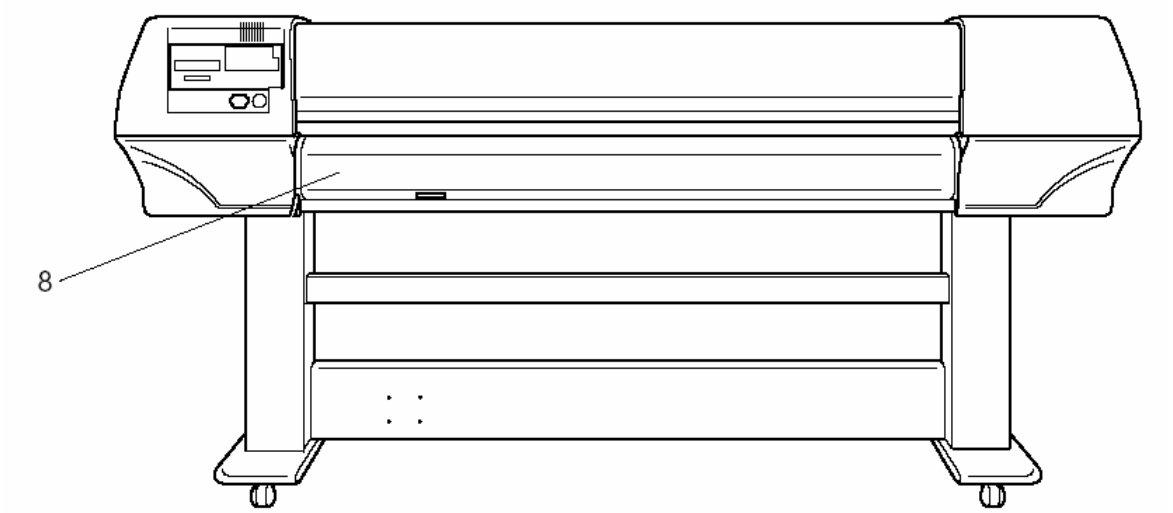
- After replacing the parts, perform necessary lubrication/bonding according to "Lubrication/Bonding".

# 4.2. REMOVING THE COVER

When replacing any of the parts inside the printer, it is necessary to remove all covers.
The procedures for removing the covers are given below.




| | |
|---|---|
| 1 = I/H cover | 5 = Panel unit assembly |
| 2 = Side cover R | 6 = Y-rail cover |
| 3 = side Cover L | 7 = Front paper guide |
| 4 = Front cover | |




| |
|---|
| 8 = Rear paper guide |

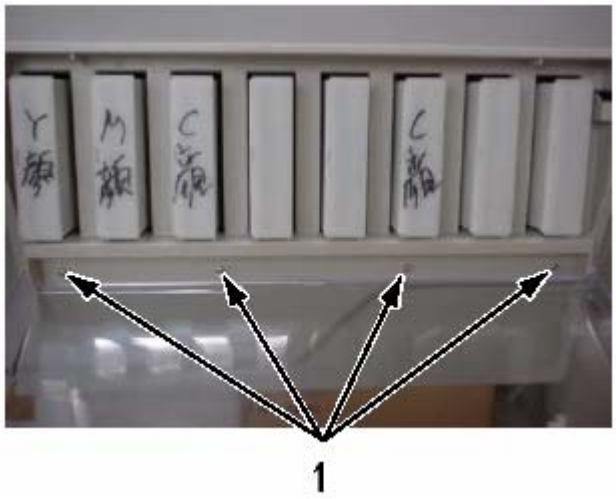
## *4.2.1. Removing the I/H cover*

**Step 1 :** Remove the ink cartridge.

**Step 2 :** Open the I/H cover lid.

**Step 3 :** Remove the 4 screws fixing the I/H cover.

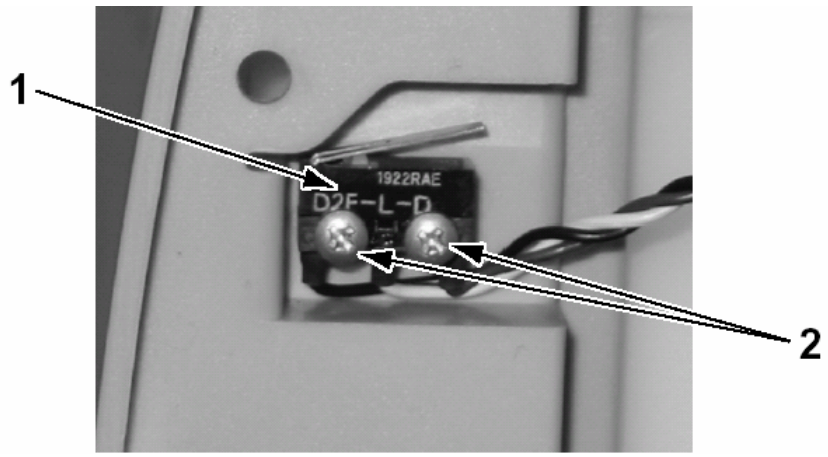
**Step 4 :** Remove the I/H cover and I/H cover lid.




| |
|---|
| 1 = Screws (M3x12) fixing the I/H cover |

**Step 5 :** Remove the 2 screws fixing the ink cover sensor.

**Step 6 :** Remove the ink cover sensor.



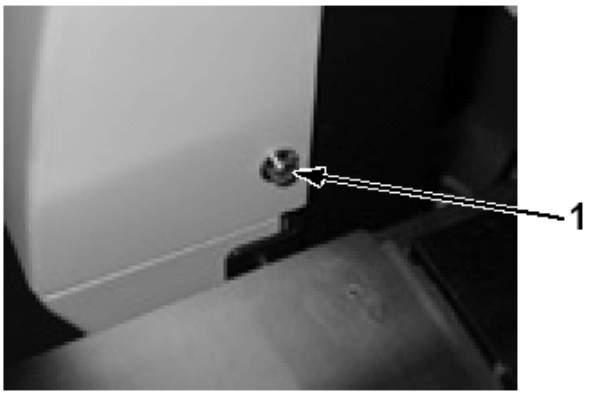

| | |
|---|---|
| 1 = Ink cover sensor | 2 = Screws (M2x10) fixing the ink cover sensor |

**Step 7 :** Replace the parts inside the printer.

**Step 8 :** Reinstall all parts in the opposite order of the removal procedure.

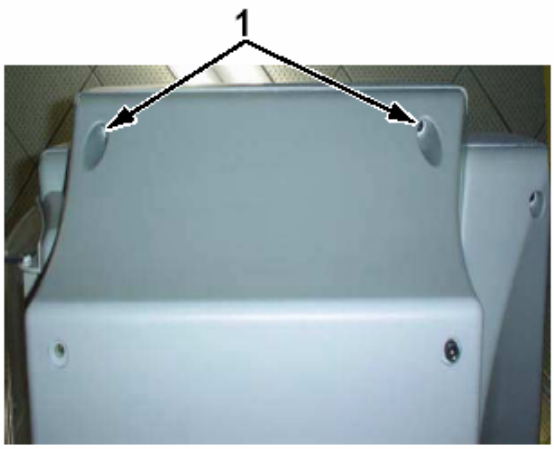
## *4.2.2. Removing side cover R*

**Step 1 :** Remove the screw from the upper part of the side cover R.



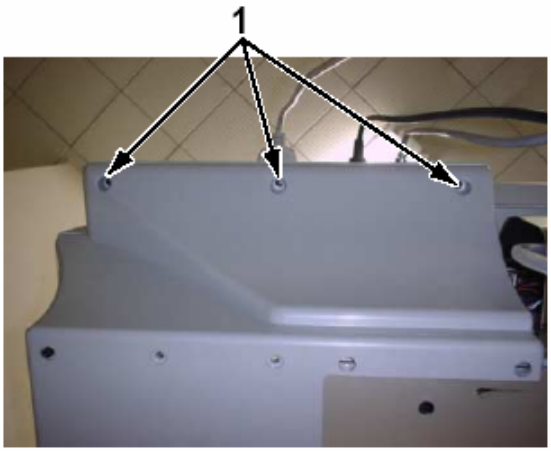

| 1 = Screws (M4x12) on the upper part of the side cover R |
|---|

**Step 2 :** Remove the 2 screws from the bottom of side cover R.




| 1 = Screws (M4x16) on the side of the bottom of side cover R |
|---|

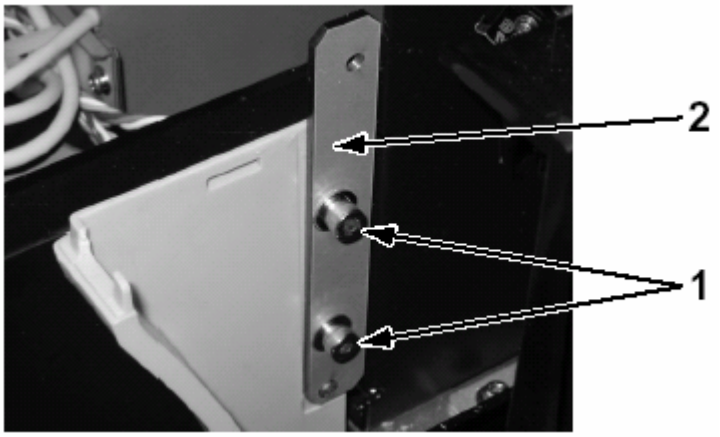
**Step 3 :** Remove the 3 screws from the back of the bottom of side cover R.




1 = Screws (M4x16) on the back of the bottom of side cover R

**Step 4 :** Remove the top of the side cover R.

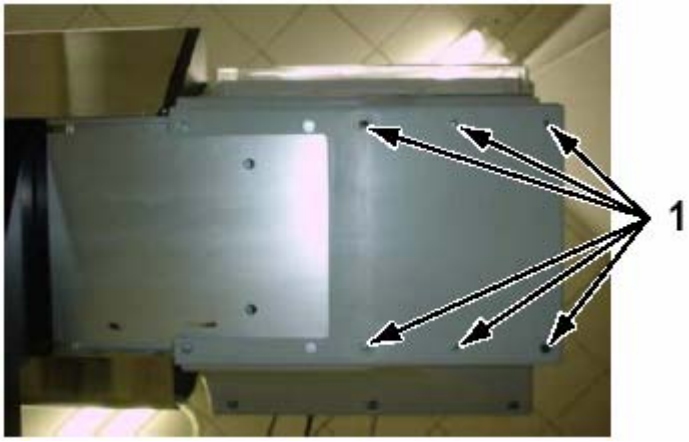
**Step 5 :** Remove the 4 bolts from the front and back of the inner surface on the bottom of side cover R and the front cover nut.




| | |
|---|---|
| 1 = Hexagon socket head cap screws (M4x16) | 2 = Cover nut |

**Step 6 :** Remove the 6 bolts from the front and back of the bottom surface on the bottom of the side cover R.

**Step 7 :** Remove the bottom of side cover R.



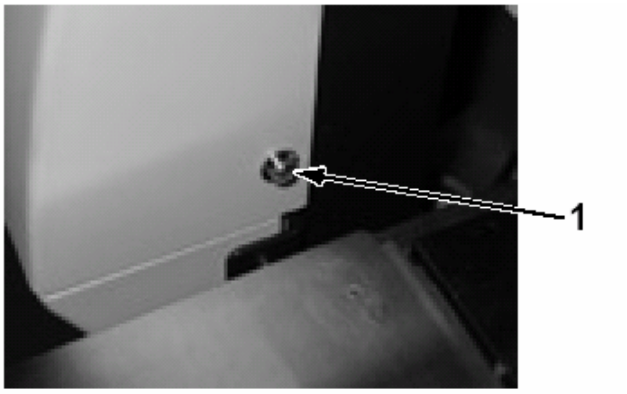

| |
|---|
| 1 = Hexagon socket head cap screws (M5x18) |

**Step 8 :** Replace the parts inside the printer.

**Step 9 :** Reinstall all parts in the opposite order of the removal procedure.

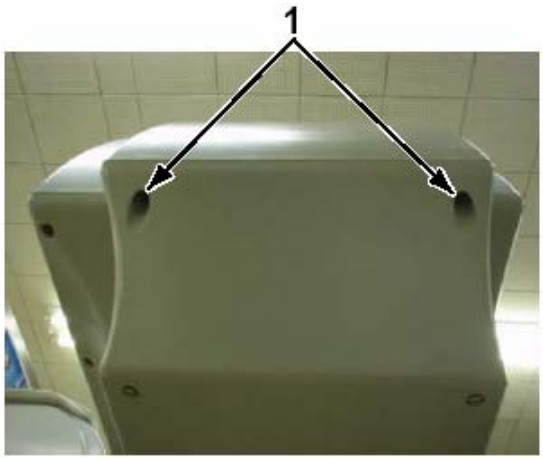
## *4.2.3. Removing side cover L*

**Step 1 :** Remove the screw from the side of the upper part of side cover L.



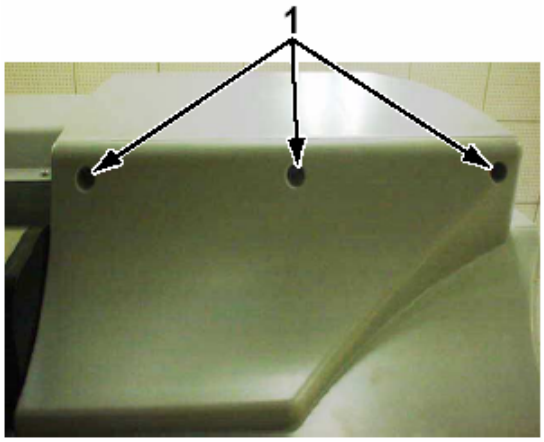

1 = Screws (M4x12) on the side of the upper part of the side cover L

**Step 2 :** Remove the 2 screws from the front of the bottom of side cover L.



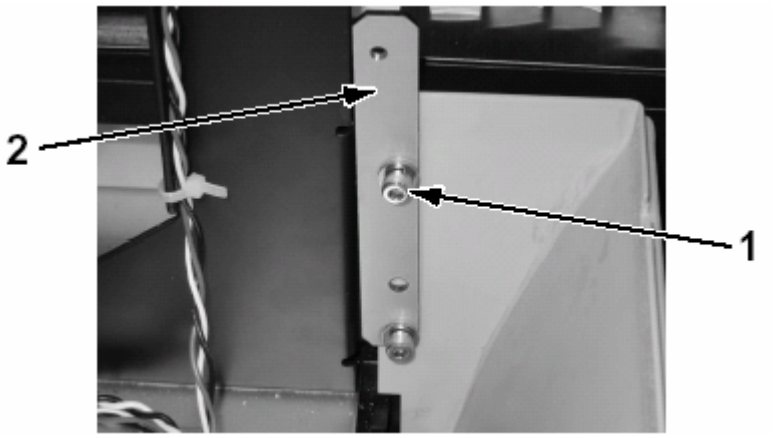

1 = Screws (4x16) on the back of the bottom of side cover L

**Step 3 :** Remove the 3 screws from the back of the bottom of side cover L.



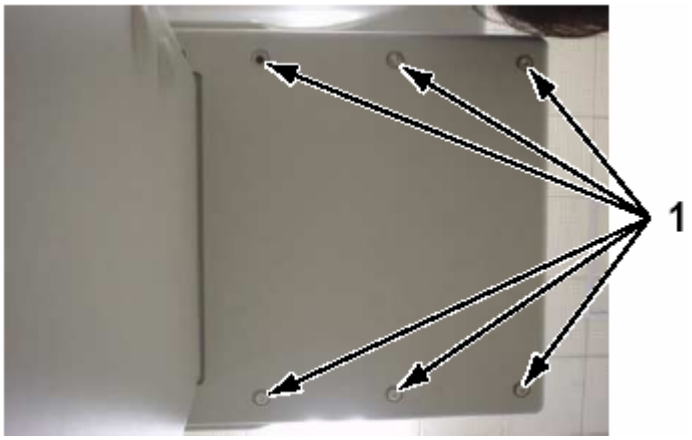

1 = Screws (M4x16) on the rear of the bottom part of the side cover L

**Step 4 :** Remove the 4 bolts and cover nut from the front and back of the inner surface on the bottom of side cover L.




| | |
|---|---|
| 1 = Hexagon socket head cap screws (M4x16) | 2 = Cover nut |

**Step 5 :** Remove the 6 bolts from the front and back of the bottom surface on the bottom of side cover L.




| |
|---|
| 1 = Hexagon socket head cap screws (M5x18) |

**Step 6 :** Remove the bottom of side cover L.

**Step 7 :** Replace the parts inside the printer.

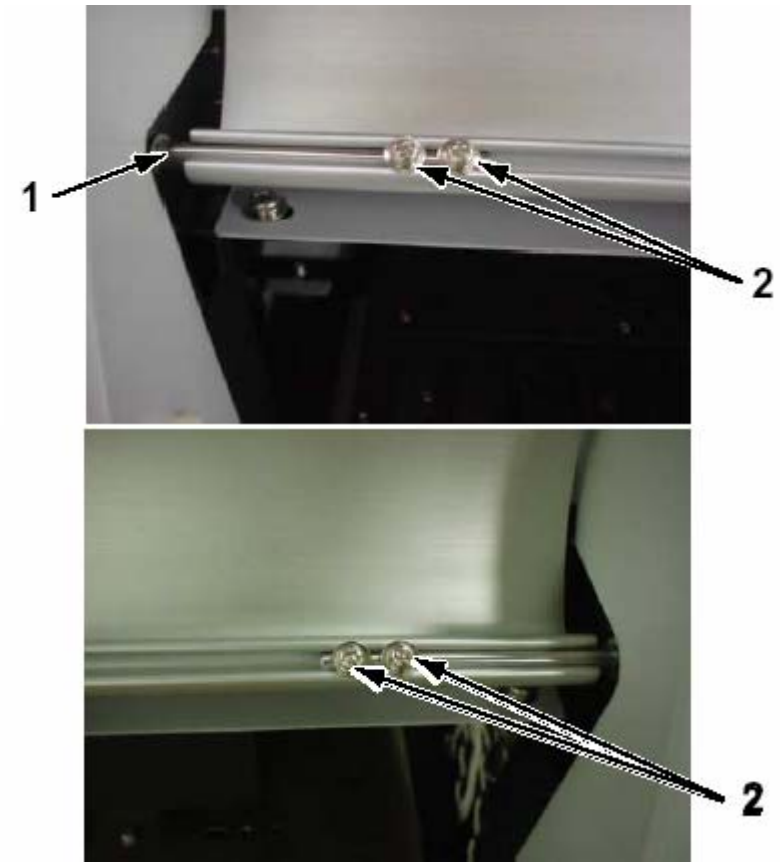
**Step 8 :** Reinstall all parts in the opposite order of the removal procedure.

## *4.2.4. Removing the front cover*

**Step 1 :** Open the front cover.

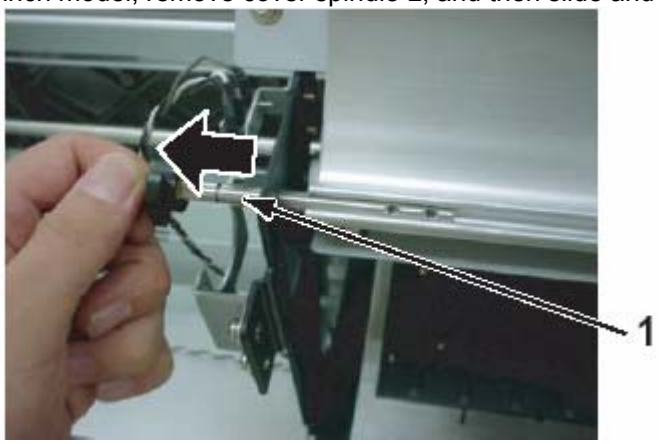
**Step 2 :** Remove the E ring on the left side.

**Step 3 :** Remove the 4 screws on the left and right cover spindles.



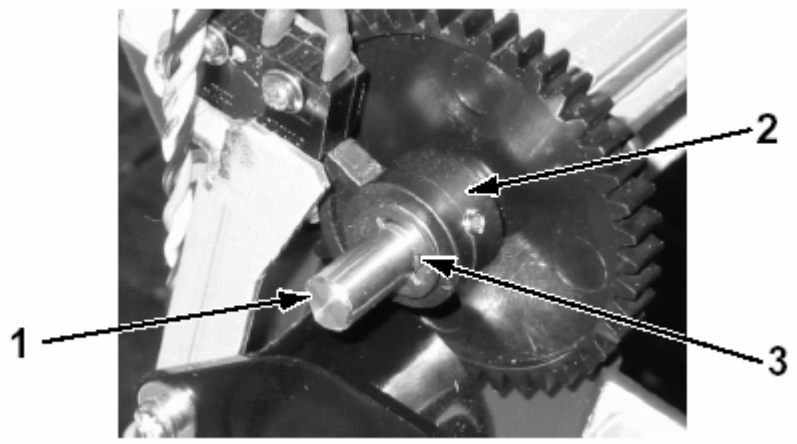

| | |
|---|---|
| 1 = E ring | 2 = Screws (M3x8) on the left and right cover spindles |

**Step 4 :** If the machine is a 50-inch model, remove cover spindle L, and then slide and remove the front cover.




| |
|---|
| 1 = Cover spindle L |

**Step 5 :** If the machine is 64 or 87-inch model, remove the E ring and the sensor cam, push the cover spindle L to the origin side and then slide and remove the front cover.




| | |
|---|---|
| 1 = Cover spindle L | 2 = Sensor cam |
| 3 = E ring | |

**Step 6 :** Reinstall all parts in the opposite order of the removal procedure.

## *4.2.5. Removing the carriage cover*

**Caution :**

Please note that this cover is only on a Falcon II Outdoor (2 heaters) printer.

**Step 1 :** Remove the I/H cover.

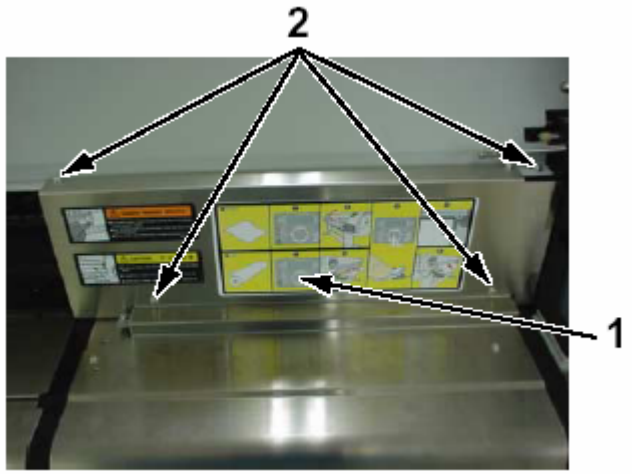
**Step 2 :** Remove side cover R.

**Step 3 :** Remove side cover L.

**Step 4 :** Remove the front cover.

**Step 5 :** Remove the 4 screws fixing the carriage cover.

**Step 6 :** Remove the carriage cover.




| | |
|---|---|
| 1 = Carriage cover | 2 = Screws (M3x6) fixing the carriage cover |

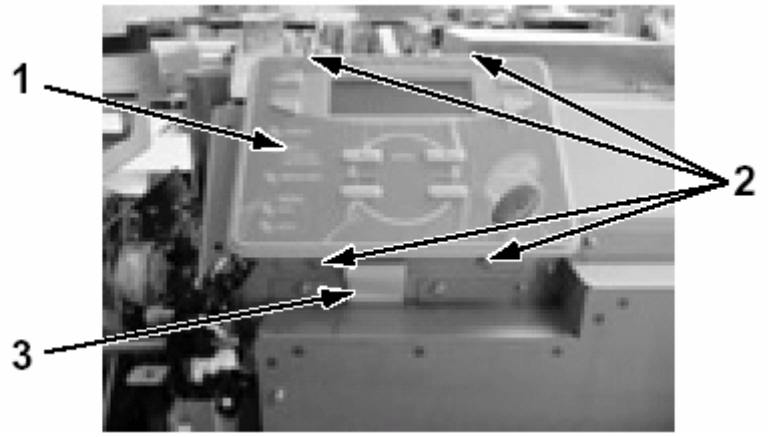
**Step 7 :** Reinstall all parts in the opposite order of the removal procedure.

## *4.2.6. Removing the panel unit assembly*

**Step 1 :** Remove side cover R.

**Step 2 :** Remove the panel tape power cord.

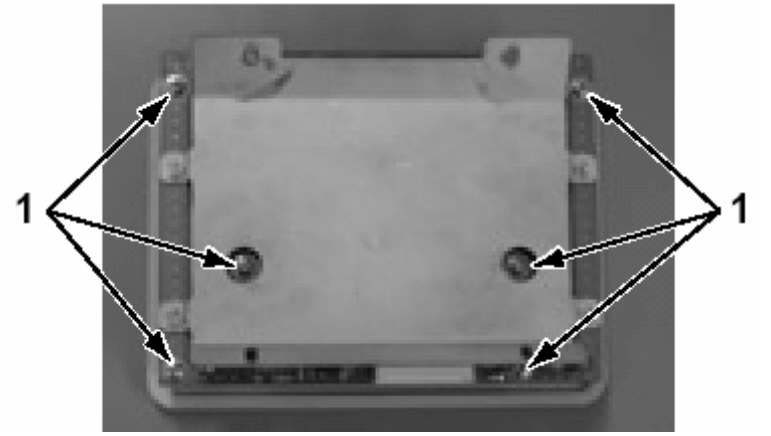
**Step 3 :** Remove the 4 screws fixing the panel base.




| | |
|---|---|
| 1 = Panel unit assembly | 2 = Screws (M3x6) fixing the panel unit assembly |
| 3 = Tape wire | |

**Step 4 :** Remove the panel unit assembly.

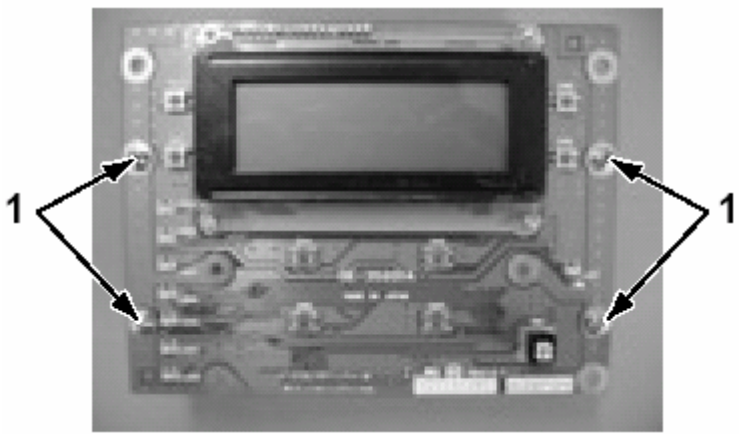
**Step 5 :** Remove the 6 screws fixing the panel board assembly and the panel cover.




| |
|---|
| 1 = Screws (M3x8) fixing the panel cover |

**Step 6 :** Remove the panel cover.

**Step 7 :** Remove the 4 screws fixing the panel bracket and the panel board assembly.




1 = Screws (M3x8) fixing the panel board assembly

**Step 8 :** Replace the panel board assembly.

**Step 9 :** Reinstall all parts in the opposite order of the removal procedure.

## *4.2.7. Removing the Y rail cover*

**Caution :**

Removing the Y rail cover, should be performed by at least two persons.
Otherwise the Y rail cover may be deformed.

**Step 1 :** Remove side cover R.

**Step 2 :** Remove side cover L.

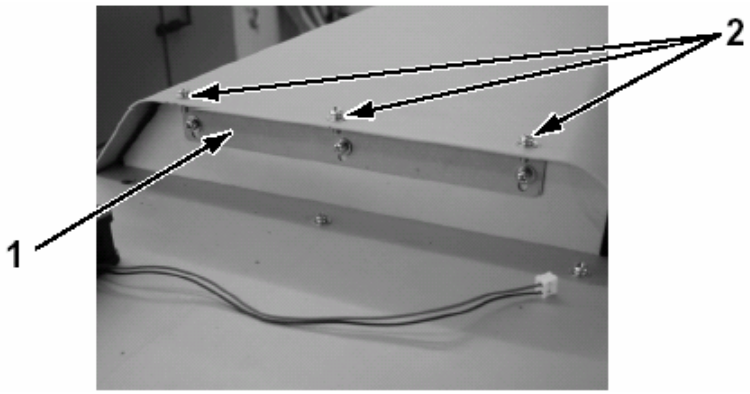
**Step 3 :** Remove the front cover.

**Step 4 :** Remove the carriage cover.

**Caution :**

Please note that this cover is only on a Falcon II Outdoor (2 heaters) printer.

**Step 5 :** Remove the 3 screws fixing the Y rail cover and the Y rail cover FG.



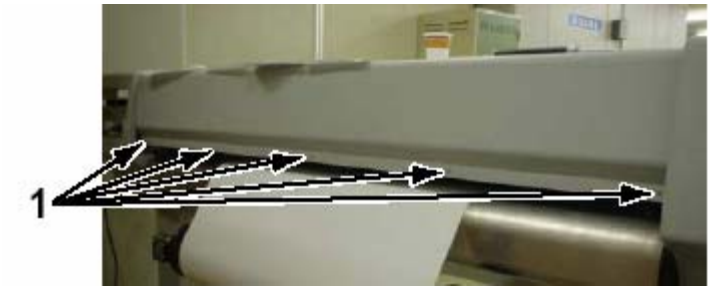

| | |
|---|---|
| 1 = Y rail cover FG | 2 = Screws (M3x6) fixing the Y rail cover and the Y rail cover FG |

**Step 6 :** Remove the 6 screws from the front of the Y rail cover.

| 1 = Screws (M4x8) on the front of the Y rail cover |
|---|

**Step 7 :** Remove the 5 screws from the rear of the Y rail cover.

- If the machine is an 87-inch model, there are 8 screws on the rear Y rail cover.




| 1 = Screws (M4x8) on the rear of the Y rail cover |
|---|

**Step 8 :** Remove the Y rail cover.

**Step 9 :** Replace the parts inside the printer.

**Step 10 :** Reinstall all parts in the opposite order of the removal procedure.

## *4.2.8. Removing front paper guide*

**Step 1 :** Remove side cover L.

**Step 2 :** Remove side cover R.

**Step 3 :** Remove the front cover.

**Step 4 :** Remove the carriage cover.

**Caution :**

Please note that this cover is only on a Falcon II Outdoor (2 heaters) printer.

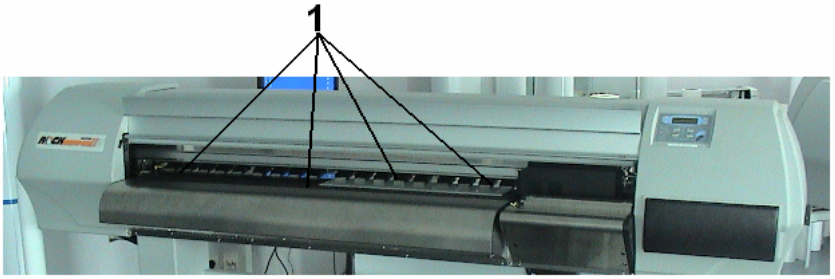
**Step 5 :** Remove the Y rail cover.

**Step 6 :** Remove the screws from the top of front media guide.

Notes :

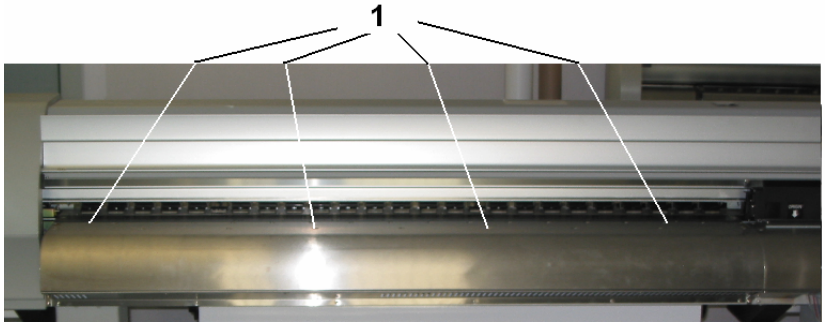
- Please note that the amount of screws is size dependent.

**Falcon II Outdoor 2 heater**




1 = Screws on the top of front media guide

**Falcon II Outdoor 4 heater**



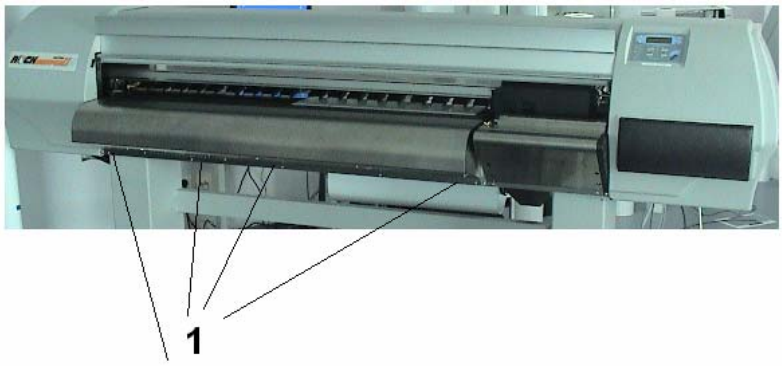

1 = Screws on the top of front media guide

**Step 7 :** Remove the screws from the front of front media guide.

Notes :

- Please note that the amount of screws is size dependent.

**Falcon II Outdoor 2 heater**




1 = Screws on the front of front media guide

**Falcon II Outdoor 4 heater**

1 = Screws on the front of front media guide

**Step 8 :** Standing before the unit move the front paper guide towards you.

**Step 9 :** Loosen the cables from their cable clamps.

**Step 10 :** Carefully loosen the connectors

Notes :

- Be sure not to damage the cables or connectors.

**Step 11 :** Remove the front paper guide.

**Step 12 :** Replace the parts inside the printer.

**Step 13 :** Reinstall all parts in the opposite order of the removal procedure.

## *4.2.9. Removing rear paper guide*

**Step 1 :** Remove side cover L.

**Step 2 :** Remove side cover R.

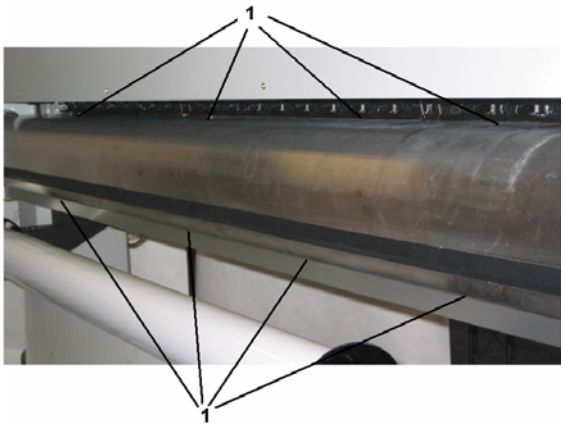
**Step 3 :** Remove the front cover.

**Step 4 :** Remove the Y rail cover.

**Step 1 :** Remove the screws from the top of the rear media guide.

Notes :

- Please note that the amount of screws is size dependent.




1 = Screws on the rear paper guide

**Step 2 :** Remove the screws from the rear of rear paper guide.

Notes :

- Please note that the amount of screws is size dependent.

**Step 3 :** Standing at the rear of the unit move the rear paper guide towards you.

**Step 4 :** Loosen the cables from their cable clamps.

**Step 5 :** Carefully loosen the connectors

Notes :

- Be sure not to damage the cables or connectors.

**Step 6 :** Remove the rear paper guide.

**Step 7 :** Replace the parts inside the printer.

**Step 8 :** Reinstall all parts in the opposite order of the removal procedure.

## *4.2.10. Removing the head cover*

**Step 1 :** Remove the I/H cover.

**Step 2 :** Remove side cover R.

**Step 3 :** Remove side cover L.

**Step 4 :** Remove the front cover.

**Step 5 :** Remove the carriage cover.

**Caution :**

Please note that this cover is only on a Falcon II Outdoor (2 heaters) printer.

**Step 6 :** Remove the Y rail cover.

**Step 7 :** Unlock the head.

Notes :

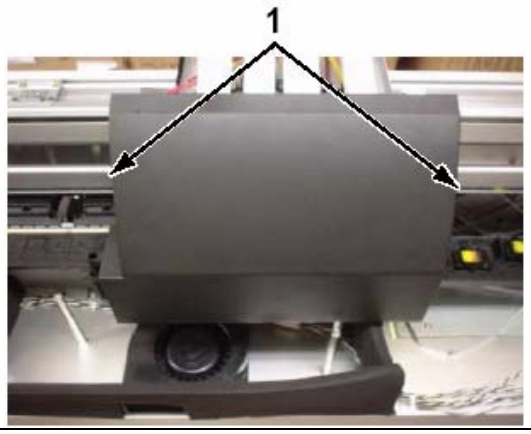
- Please refer to the 'Head lock menu'.

**Step 8 :** Pull the head out to the left of the maintenance station.

**Caution :**

When pulling the head out, do not press on the cutter cap. Doing so could damage the cutter blade.

**Step 9 :** Remove the 2 screws fixing the head cover.



1 = Screws (M3x8) fixing the head cover

**Step 10 :** Remove the head cover.

**Step 11 :** Replace the parts inside the printer.

**Step 12 :** Reinstall all parts in the opposite order of the removal procedure.

## *4.2.11. Removing the maintenance cover*

**Step 1 :** Remove the I/H cover.

**Step 2 :** Remove side cover R.

**Step 3 :** Remove side cover L.

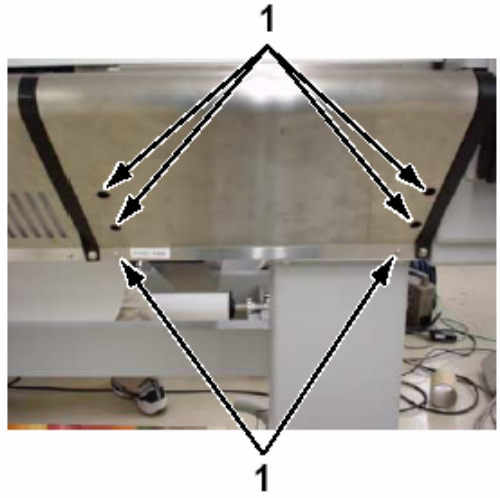
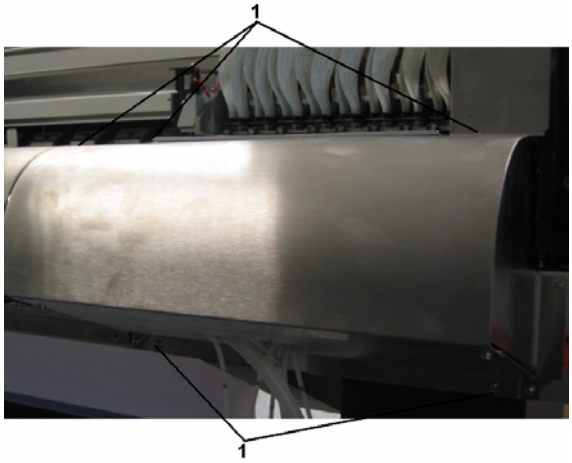
**Step 4 :** Remove the front cover.

**Step 5 :** Remove the carriage cover.

**Caution :**

Please note that this cover is only on a Falcon II Outdoor (2 heaters) printer.

**Step 6 :** Remove the 6 screws fixing the maintenance cover.

| Falcon II Outdoor 2 heater | Falcon II Outdoor 4 heater |
|---|---|
|   |   |
| 1 = Screws (M3x8) | 1 = Screws (M3x8) |

**Step 7 :** Remove the maintenance cover.

**Step 8 :** Replace the parts inside the printer.

**Step 9 :** Reinstall all parts in the opposite order of the removal procedure.

# 4.3. REPLACEMENT OF THE HEATER ELEMENT

To replace a heater element of the Falcon II Outdoor series printer, please follow the instructions mentioned in the explanation of the appropriate heater element.

**1. Falcon II Outdoor :**

- 1. Replacing the front heater (Heater D) on a Falcon II Outdoor printer
- 2. Replacing the rear heater (Heater A) on a Falcon II Outdoor printer

**2. Falcon II Outdoor 4H :**

- 1. Replacing the dryer (Heater D) on a Falcon II Outdoor 4H printer
- 2. Replacing the post-fixer (Heater C) on a Falcon II Outdoor 4H printer
- 3. Replacing the fixer (Heater B) on a Falcon II Outdoor 4H printer
- 4. Replacing the heater (Heater A) on a Falcon II Outdoor 4H printer

**Caution :**

- In case the fuse of the heating element is locked, do not replace the fuse but replace the appropriate heater element. Installation of a fuse of the heater element needs to be done in a special production environment.

**Important :**

**Before replacing parts, be sure to perform the following operations.**

- **Turn the machine power OFF.**
- **Remove the product's electrical plug from the socket. Otherwise, you may suffer electric shock or the machine's electric circuits may be damaged.**
- **Disconnect all cables from the machine. Not doing so could cause damage to the printer.**

## *4.3.1. Falcon II Outdoor 2 heaters : Heater elements*

### *4.3.1.1. Replacing the front heater (Heater D) on a Falcon II Outdoor printer*

Before replacing the front heater, make sure to have following items:

- 50" model : Heat Strip Assy Front 1 50 (EY-80236) and Heat Strip Assy Front 2 50 (EY-80237)
- 64" model : Heat Strip Assy Front 1 64 (EY-80216) and Heat Strip Assy Front 2 64 (EY-80217)
- 87" model : Heat Strip Assy Front 1 87 (EY-80226) and Heat Strip Assy Front 2 87 (EY-80227)
- 4 x sensor insul. Patch (ME-80310)

To replace the front heater on a Falcon II Outdoor printer, please follow the instructions mentioned below.

**Step 1 :** Remove side cover L.

**Step 2 :** Remove side cover R.

**Step 3 :** Remove the front cover.

**Step 4 :** Remove the carriage cover.

**Step 5 :** Remove the Y rail cover.

**Step 6 :** Remove the front paper guide.

**Step 7 :** Remove the front heater strip(s).

**Step 8 :** Degrease the plate.

Notes :

- Make sure the plate is cleaned properly. Dust, glue and other parts must be removed.

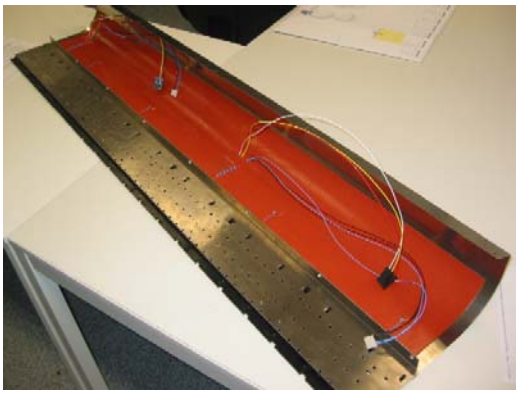
**Step 9 :** Stick the front heater strip(s) onto the plate.

Notes :

- Make sure that the strips connect properly.
- Please make sure that the sensor (blue blocks) are positioned on the flat surface of the front paper guide.

Notes :

- Please make sure that there are no air bubbles under the heater strip. Air bubbles below the heater strip could cause overheating of the heater strip.



**Step 10 :** Stick onto the sensor an isolation strip.

**Step 11 :** Reinstall all parts in the opposite order of the removal procedure.

Notes :

- During reinstallation of the plate, make sure there are no cables stuck.

## *4.3.1.2. Replacing the rear heater on a Falcon II Outdoor printer*

Before replacing the post fixer, make sure to have following items:

- 50" model : Heater strip assy rear 50 (EY-80238)
- 64" model : Heater strip assy rear 64 (EY-80218)
- 87" model : Heater strip assy rear 87 (EY-80228)
- 2 x press plate (ME-24134)
- Silicone glue (AG-91240)

To replace the rear heater on a Falcon II Outdoor printer, please follow the instructions mentioned below.

**Step 1 :** Remove side cover L.

**Step 2 :** Remove side cover R.

**Step 3 :** Remove the front cover.

**Step 4 :** Remove the Y rail cover.

**Step 5 :** Remove the rear paper guide.

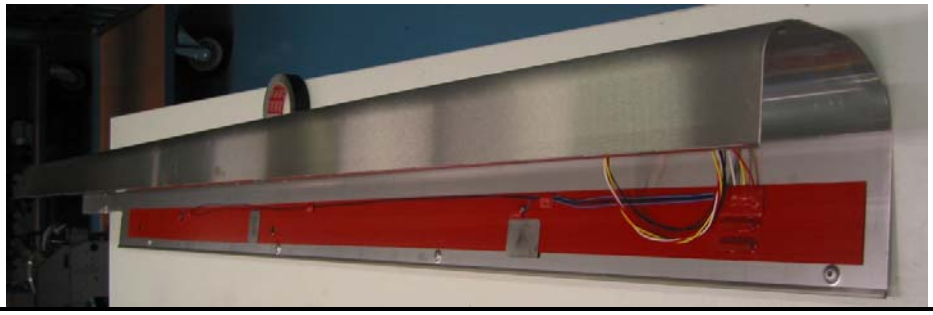
**Step 6 :** Remove the rear heater strip.

**Step 7 :** Degrease the plate.

Notes :

- Make sure the plate is cleaned properly. Dust, glue and other parts must be removed.

**Step 8 :** Stick the rear heater strip onto the plate.



**Step 9 :** Stick (with silicone glue) the two press plates onto the heater strip.

- 50” model : X = 380 mm
- 64” model : X = 380 mm / Y = 1060 mm
- 87” model : X = 660 mm / Y = 1200 mm

Notes :

- It will take ± 1 hour to let the glue dry.

**Step 10 :** Reinstall all parts in the opposite order of the removal procedure.

Notes :

- During reinstallation of the plate, make sure there are no cables stuck.

## *4.3.2. Falcon II Outdoor 4 heaters : Heater elements*

### *4.3.2.1. Replacing the dryer (Heater D) on a Falcon II Outdoor 4H printer*

Before replacing the dryer, make sure to have following items:

- 50” model : Dryer D1 50 (EY-80346) and Dryer D2 50 (EY-80347)
- 64” model : Dryer D1 64 (EY-80341) and Dryer D2 64 (EY-80342)
- 87” model : Dryer D1 87 (EY-80356) and Dryer D2 87 (EY-80357)
- 2 x sensor insul. Patch (ME-80310)

To replace the dryer on a Falcon II Outdoor 4H printer, please follow the instructions mentioned below.

**Step 1 :** Remove side cover L.

**Step 2 :** Remove side cover R.

**Step 3 :** Remove the front cover.

**Step 4 :** Remove the Y rail cover.

**Step 5 :** Remove the front paper guide.

**Step 6 :** Remove the dryer strip(s).

**Step 7 :** Degrease the plate.

Notes :

- Make sure the plate is cleaned properly. Dust, glue and other parts must be removed.

**Step 8 :** Stick the dryer strip(s) onto the plate.

Notes :

- Make sure that the strips connect properly.
- Please make sure that the sensor (blue blocks) are positioned on the flat surface of the front paper guide.
- Stick it as close as possible to the assembly holes. Make sure it does not touch the assembly holes.

Notes :

- Please make sure that there are no air bubbles under the heater strip. Air bubbles below the heater strip could cause overheating of the heater strip.

**Step 9 :** Stick onto the sensors a sensor insul. patch.

| | |
|---|---|
| 1 = sensor insul. patch | 2 = assembly hole |

**Step 10 :** Reinstall all parts in the opposite order of the removal procedure.

Notes :

- During reinstallation of the plate, make sure there are no cables stuck.

### *4.3.2.2. Replacing the post fixer (Heater C) on a Falcon II Outdoor 4H printer*

Before replacing the heater, make sure to have following items:

- 50" model : Post Fixer C 50 (EY-80343)
- 64" model : Post Fixer C 64 (EY-80333)
- 87" model : Post Fixer C 87 (EY-80353)
- 1 x sensor insul. Patch (ME-80310)

To replace the post fixer on a Falcon II Outdoor 4H printer, please follow the instructions mentioned below.

**Step 1 :** Remove side cover L.

**Step 2 :** Remove side cover R.

**Step 3 :** Remove the front cover.

**Step 4 :** Remove the Y rail cover.

**Step 5 :** Remove the front paper guide.

**Step 6 :** Remove the post fixer strip.

**Step 7 :** Degrease the plate.

Notes :

- Make sure the plate is cleaned properly. Dust, glue and other parts must be removed.

**Step 8 :** Stick the post fixer strip onto the plate.

Notes :

- Make sure that the strips connect properly.
- Stick it as close as possible to the assembly holes. Make sure it does not touch the assembly holes.

Notes :

- Please make sure that there are no air bubbles under the heater strip. Air bubbles below the heater strip could cause overheating of the heater strip.

**Step 9 :** Stick onto the sensor a sensor insul. patch.

| | |
|---|---|
| 1 = sensor insul. patch | 2 = assembly hole |

**Step 10 :** Reinstall all parts in the opposite order of the removal procedure.

Notes :

- During reinstallation of the plate, make sure there are no cables stuck.

## *4.3.2.3. Replacing the fixer (Heater B1 and Heater B2) on a Falcon II Outdoor 4H printer*

Before replacing the fixer, make sure to have following items:

- 50” model : Fixer B1 50 (EY-80348) and Fixer B2 50 (EY-80349)
- 64” model : Fixer B1 64 (EY-80338) and Fixer B2 64 (EY-80339)
- 87” model : Fixer B1 87 (EY-80358) and Fixer B2 87 (EY-80359)
- Isolation tape (AP-51210)
- Plot platform calibre (TL-80200)

To replace the fixer on a Falcon II Outdoor 4H printer, please follow the instructions mentioned below.

**Step 1 :** Remove side cover L.

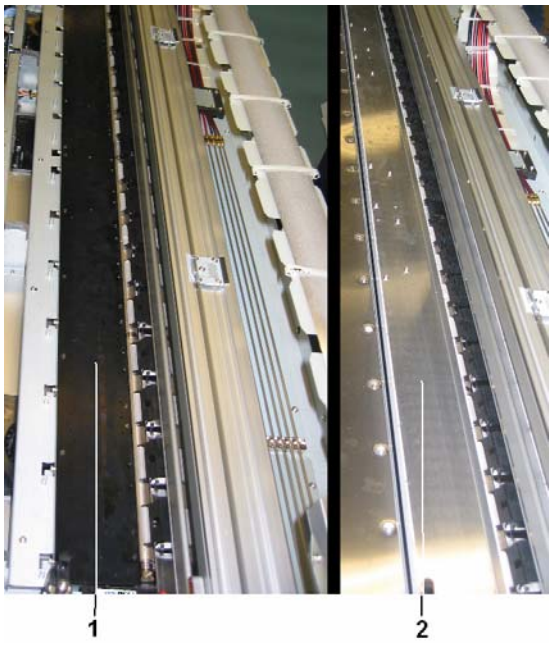
**Step 2 :** Remove side cover R.

**Step 3 :** Remove the front cover.

**Step 4 :** Remove the Y rail cover.

**Step 5 :** Remove the front paper guide.

**Step 6 :** Place the plot platform calibre onto the plot platforms.




| | |
|---|---|
| 1 = plot platforms | 2 = plot platform calibre onto the plot platforms |

**Step 7 :** Fix the plot platform calibre onto the plot platform.

| | |
|---|---|
| 1 = Fix plot platform calibre | 2 = reachable screws of plot platform |

Notes :

- Make sure the screws of the plot platform are reachable.

**Step 8 :** Remove the screws of the plot platform.

1 = screws plot platform

**Step 9 :** Pull upwards the plot platform calibre and so remove the plot platform with fixer.

**Step 10 :** Remove the fixer.

**Step 11 :** Degrease the plot platform.

Notes :

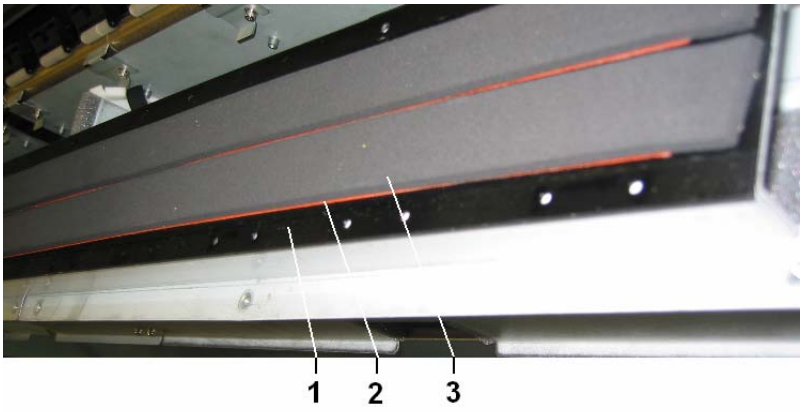
- Make sure the plate is cleaned properly. Dust, glue and other parts must be removed.

**Step 12 :** Stick the two fixer strips onto the plot platform.

Notes :

- Please make sure that there are no air bubbles under the heater strip. Air bubbles below the heater strip could cause overheating of the heater strip.

**Step 13 :** Stick the isolation tape onto the heater strips.




| | |
|---|---|
| 1 = plot platform | 2 = fixer heater strip |
| 3 = isolation tape | |

**Step 14 :** Reinstall all parts in the opposite order of the removal procedure.

Notes :

- During reinstallation of the plate, make sure there are no cables stuck.

## *4.3.2.4. Replacing the heater (Heater A) on a Falcon II Outdoor 4H printer*

Before replacing the post fixer, make sure to have following items:

- 50” model : Heater A 50 (EY-80345)
- 64” model : Heater A 64 (EY-80340)
- 87” model : Heater A 87 (EY-80355)
- 2 x press plate (ME-24134)
- Silicone glue (AG-91240)

To replace the heater on a Falcon II Outdoor 4H printer, please follow the instructions mentioned below.

**Step 5 :** Remove side cover L.

**Step 6 :** Remove side cover R.

**Step 7 :** Remove the front cover.

**Step 8 :** Remove the Y rail cover.

**Step 9 :** Remove the rear paper guide.

**Step 10 :** Remove the heater strip.

**Step 11 :** Degrease the plate.

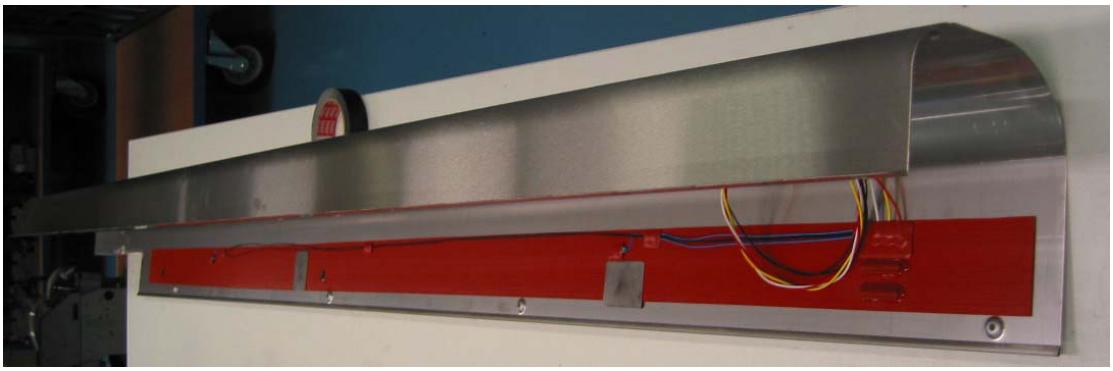
Notes :

- Make sure the plate is cleaned properly. Dust, glue and other parts must be removed.

**Step 12 :** Stick the heater strip onto the plate.

Notes :

- Please make sure that there are no air bubbles under the heater strip. Air bubbles below the heater strip could cause overheating of the heater strip.



**Step 13 :** Stick (with silicone glue) the two press plates onto the heater strip.

- 50” model : X = 380 mm
- 64” model : X = 380 mm / Y = 1060 mm
- 87” model : X = 660 mm / Y = 1200 mm

Notes :

- It will take ± 1 hour to let the glue dry.

**Step 14 :** Reinstall all parts in the opposite order of the removal procedure.

Notes :

- During reinstallation of the plate, make sure there are no cables stuck.

# 4.4. REPLACING BOARD BASES

This chapter explains the procedures for replacing the power source board assembly, mainboard assembly, PCI_Linux board assembly and cooling fan assembly.

**Caution :**

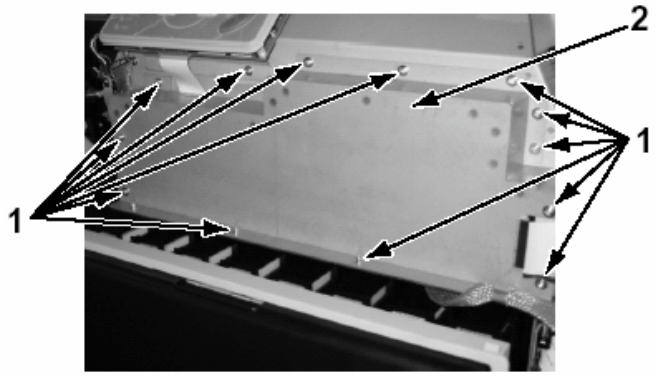
When handling circuit boards, do not touch the elements on the board with your bare hands. Doing so may cause static electricity and break the elements.

## *4.4.1 Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly, PCI_Linux board assembly and cooling fan assembly*

Notes :

- To replace the board and connect or disconnect the FFC type cable, you should leave the plug disconnected from the power socket for a while. Otherwise, over-current could be generated and damage board.
- When changing the main substrate assembly, follow "Parameter backup" to backup the parameter. Failure to do so could cause the life span counters for the waste fluid tank and tube not to reset, resulting in an overflow of ink inside the printer. See "Adjustment" for details of other adjustment.
- Remove the following parts before replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly, PCI_Linux board assembly and cooling fan assembly:
  - Panel unit assembly: "Removing the panel unit assembly"
  - Hard disk: "User's Guide"

**Step 1 :** Remove the 20 screws fixing the Mainboard cover 3.




| | |
|---|---|
| 1 = Mainboard cover 3 | 2 = 2 Screws (M3x6) fixing the Mainboard cover |

**Step 2 :** Remove the Mainboard cover 3.

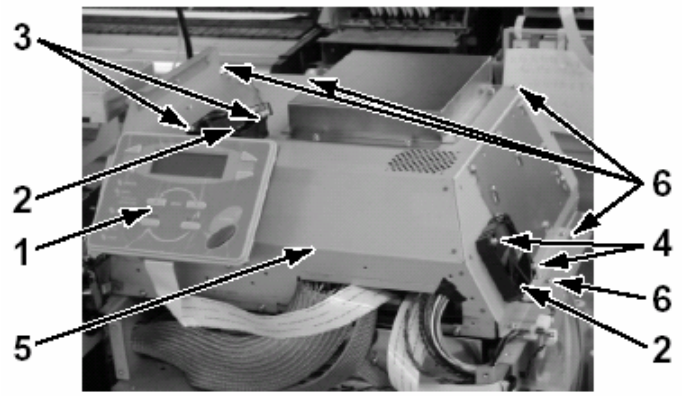
**Step 3 :** Follow the instructions in “Removing the panel unit assembly” to remove the panel unit assembly.

**Step 4 :** Remove the connector between the cooling fan cable and the cooling fan assembly.

**Step 5 :** Remove the 2 top and 2 bottom screws fixing the cooling fan assembly.

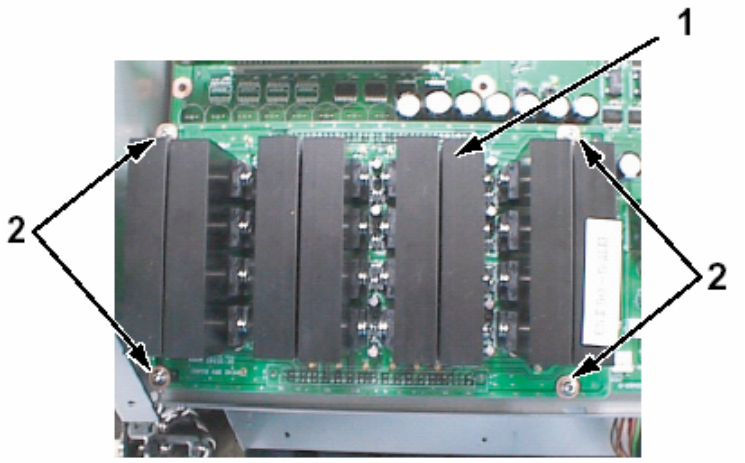
**Step 6 :** Replace the cooling fan assembly.

**Step 7 :** Remove the 15 screws fixing the Mainboard cover.




| | |
|---|---|
| 1 = Panel unit assembly | 2 = Cooling fan assembly |
| 3 = Screws (M3x25) fixing the cooling fan assembly | 4 = Screws (M3x20) fixing the cooling fan assembly |
| 5 = Mainboard cover | 6 = Screws (M3x6) fixing the Mainboard cover |

**Step 8 :** Remove the 4 screws fixing the HEAD_DRV board assembly.




| | |
|---|---|
| 1 = HEAD_DRV board assembly | 2 = Screws (M3x6) fixing the HEAD_DRV board assembly |

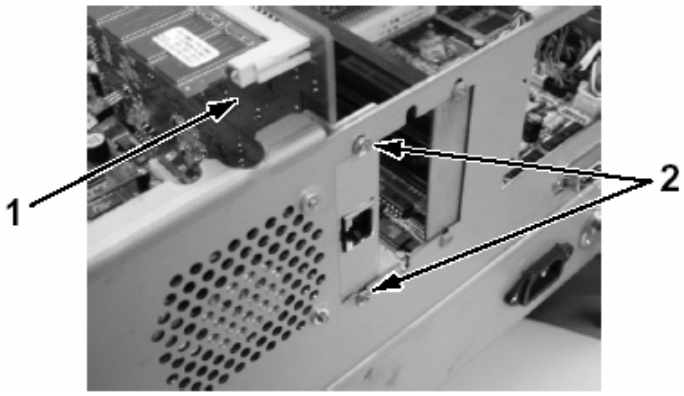
**Step 9 :** Replace the HEAD_DRV board assembly.

**Step 10 :** Remove FFC protection material between HEAD_DRV board assembly and Mainboard assembly.

**Step 11 :** Remove following connectors from the Mainboard assembly.

| N° | Connector N° | # of pins | Colour | Connected to | Remarks |
|---|---|---|---|---|---|
| 1 | J101 | 12 | White | Mainboard | Lock type |
| 2 | J102 | 6 | White | Power | Lock type |
| 3 | J103 | 168 | | DIMM | |
| 4 | J104 | 68 | | | |
| 5 | J105 | 28 | White or black | | Lock type |
| 6 | J106 | 120 | | PCI_LINUX board | |
| 7 | J107 | 120 | | PCI_LINUX board | |
| 8 | J108 | 120 | | PCI_LINUX board | |
| 9 | J109 | 39 | | | |
| 10 | J110 | 96 | White | HD_MOTHER board | |
| 11 | J111 | 3 | White | Adhesion FAN 1 | Free |
| 12 | J112 | 2 | Blue | Adhesion FAN 2 | For 50, 64, 87 inch spec |
| 13 | J113 | 2 | Red | Adhesion FAN 3 | For 50, 64, 87 inch spec |
| 14 | J114 | 2 | Yellow | Adhesion FAN 4 | For 50, 64, 87 inch spec |
| 15 | J115 | 2 | Black | Adhesion FAN 5 | For 50, 64, 87 inch spec. |
| 16 | J116 | 2 | White | Adhesion FAN 6 | For 87 inch spec. |
| 17 | J117 | 3 | Yellow | | Free |
| 18 | J118 | 3 | Black | DRV_FAN 1 | |
| 19 | J119 | | | | No preparation |
| 20 | J120 | 3 | Red | Waste fluid BOX sensor cable | |
| 21 | J121 | 4 | White | Ink cover sensor | |
| 22 | J122 | 5 | White | Lever foot SW cable | |
| 23 | J123 | 4 | Black | Lever up sensor | Transmission photosensor |
| 24 | J124 | 4 | Yellow | Lever down sensor | Transmission photosensor |
| 25 | J125 | 6 | White | Maintenance origin sensor cable | Transmission photosensor |
| 26 | J126 | | | | No preparation |
| 27 | J127 | 5 | Red | Head slide sensor | |
| 28 | J128 | 5 | Yellow | P_REAR_L sensor | |
| 29 | J129 | 4 | Blue | P_REAR_R sensor | |
| 30 | J130 | 4 | | CR origin sensor | Transmission photosensor |
| 31 | J131 | 5 | Black | Wiper origin sensor | Transmission photosensor |
| 32 | J132 | | | | No preparation |
| 33 | J133 | 30 | White or black | JUNCTION board | Lock type |
| 34 | J134 | 30 | White or black | JUNCTION board | Lock type |
| 35 | J135 | | | HEAD_DRV board | |
| 36 | J136 | | | HEAD_DRV board | |
| 37 | J137 | 30 | White or black | CR board | Lock type |
| 38 | J138 | 30 | White or black | CR board | Lock type |
| 39 | J139 | 30 | White or black | CR board | Lock type |
| 40 | J140 | 30 | White or black | CR board | Lock type |
| 41 | J141 | 30 | White or black | CR board | Lock type |
| 42 | J142 | 30 | White or black | CR board | Lock type |
| 43 | J143 | 30 | White or black | CR board | Lock type |

| | | | | | |
|---|---|---|---|---|---|
| 44 | J144 | 30 | White or black | CR board | Lock type |
| 45 | J145 (87) | 30 | White or black | CR board | Lock type |
| 46 | J146 (87) | 30 | White or black | CR board | Lock type |
| 47 | J147 (87) | 30 | White or black | CR board | Lock type |
| 48 | J148 (87) | 30 | White or black | CR board | Lock type |
| 49 | J149 (87) | 30 | White or black | CR board | Lock type |
| 50 | J150 (87) | 30 | White or black | CR board | Lock type |
| 51 | J151 (87) | 30 | White or black | CR board | Lock type |
| 52 | J152 (87) | 30 | White or black | CR board | Lock type |
| 53 | J153 | 5 | Black | | Free |
| 54 | J154 | 5 | White | PF_ENC | |
| 55 | J155 | 3 | White | Cover R sensor | |
| 56 | J156 | 3 | Black | Cover L sensor | |
| 57 | J157 | 2 | White | PF motor | Lock type |
| 58 | J158 | 3 | White | CR motor | Lock type |
| 59 | J159 | 4 | White | Lever motor | Lock type |
| 60 | J160 | 4 | White | Pump 1 motor | |
| 61 | J161 | 5 | White | Pump 2 motor | |
| 62 | J162 | 6 | White | HEAD U/D motor | |
| 63 | J163 | 7 | White | Maintenance U/D motor | |
| 64 | J164 | 4 | White | Wiper motor | |
| 65 | J165 | | | | |
| 66 | J167 | 7 | White | Interf. Cable Db9-Jst | |




| | |
|---|---|
| 1 = PCI_Linux board assembly | 2 = Screws fixing the PCI_Linux board assembly (M3x6) |

**Step 12 :** Remove the 2 screws fixing the PCI_Linux board assembly.

**Step 13 :** Replace the PCI_Linux board assembly.

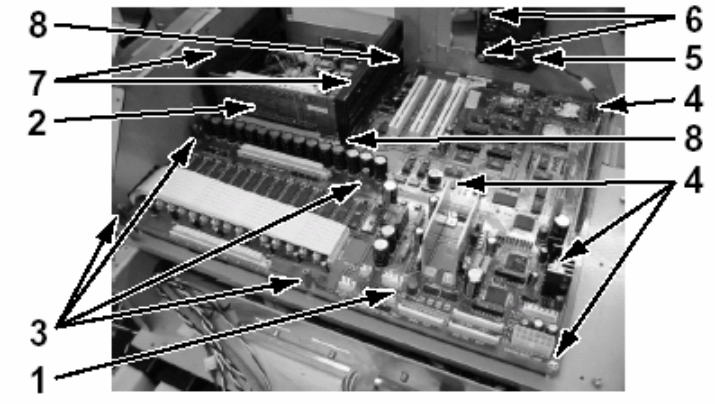
**Step 14 :** Remove the 2 screws fixing the cooling fan assembly.

**Step 15 :** Replace the cooling fan assembly.

**Step 16 :** Remove the 4 screws fixing the I/F guide.

**Step 17 :** Remove I/F guide.

**Step 18 :** Remove the 6 screws and 4 hexagon spacers fixing the Mainboard assembly.




| | |
|---|---|
| 1 = Mainboard assembly | 2 = HDD_Extension board assembly |
| 3 = Hexagon spacer | 4 = Screws (M3x6) |
| 5 = Cooling fan assembly | 6 = Screws (M3x20) fixing the cooling fan assembly |
| 7 = I/F guide | 8 = Screws (M3x8) fixing the I/F guide |

**Step 19 :** Replace the HDD_Extension board assembly.

**Step 20 :** Replace the Mainboard assembly.

**Step 21 :** Reinstall all parts in the opposite order of the removal procedure.

**Step 22 :** Perform media sensor sensitivity adjustment following the "Media sensor sensitivity adjustment" procedure.

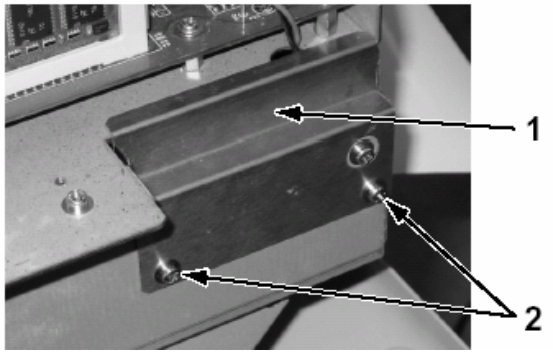
## *4.4.2. Replacing the power source board assembly*

**Caution :**

When removing the power source board assembly, remove the power cable and set it aside for at least 5 minutes in order to completely discharge the electric charge remaining in the electrolytic capacitor before continuing with the procedure.
Touching the substrate before discharging the capacitor causes electric shock.

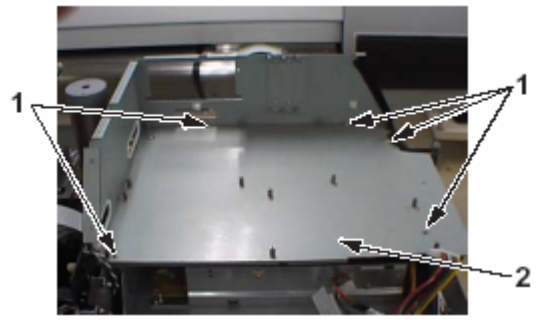
**Step 1 :** Follow the instructions in "Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly, PCI_Linux board assembly and cooling fan assembly" to remove the Mainboard assembly.

**Step 2 :** Remove the 2 screws fixing the PS board cover.




| | |
|---|---|
| 1 = PS board cover | 2 = Screws (M3x6) fixing the PS board cover |

**Step 3 :** Remove the 5 screws fixing the Mainboard base.



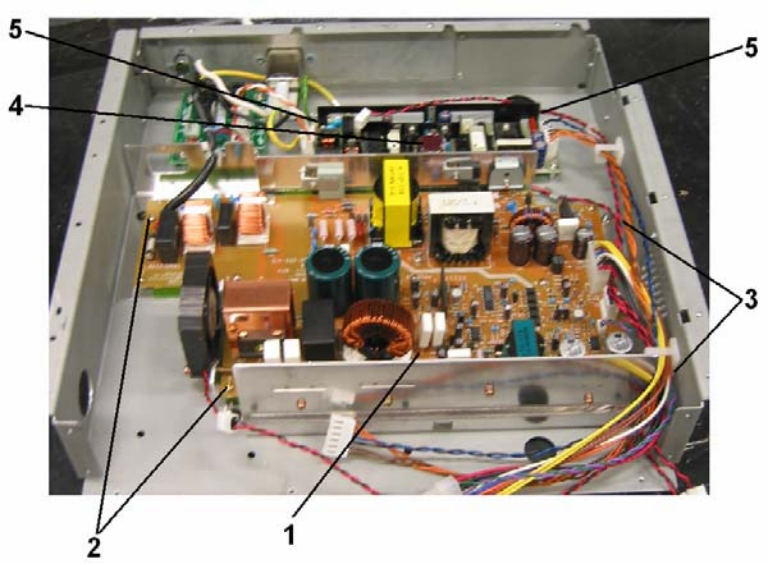

| | |
|---|---|
| 1 = Mainboard base | 2 = Screws (M3x8) fixing the Mainboard base |

**Step 4 :** Remove the Mainboard base.

**Step 5 :** Remove the following connectors from the power source board assembly.

| N° | Connector N° | # of pins | Colour | Connected to | Remarks |
|---|---|---|---|---|---|
| 1 | CN2 | 3 | White | Mainboard J101 | |
| 2 | CN3 | 4 | White | + 5V adhesion FAN | Output four adhesion FAN |
| 3 | CN4 | 12 | White | Mainboard J101 | |

**Step 6 :** Remove the 4 screws fixing the power source.




| | |
|---|---|
| 1 = Power source board assembly | 2 = Screws (M4x8) fixing the power board assembly |
| 3 = Hexagon nut fixing the power board assembly | 4 = Power source |
| 5 = Screws (M3x6) fixing the power source | |

**Step 7 :** Replace the power source.

**Step 8 :** Remove the 2 screws and 2 hexagon nuts fixing the power source board assembly.

**Step 9 :** Remove the power source board assembly.

**Step 10 :** Reinstall all parts in the opposite order of the removal procedure.

Notes :

- When installing the mainboard assembly, be careful not to pinch the foot SW cables by the mainboard base.

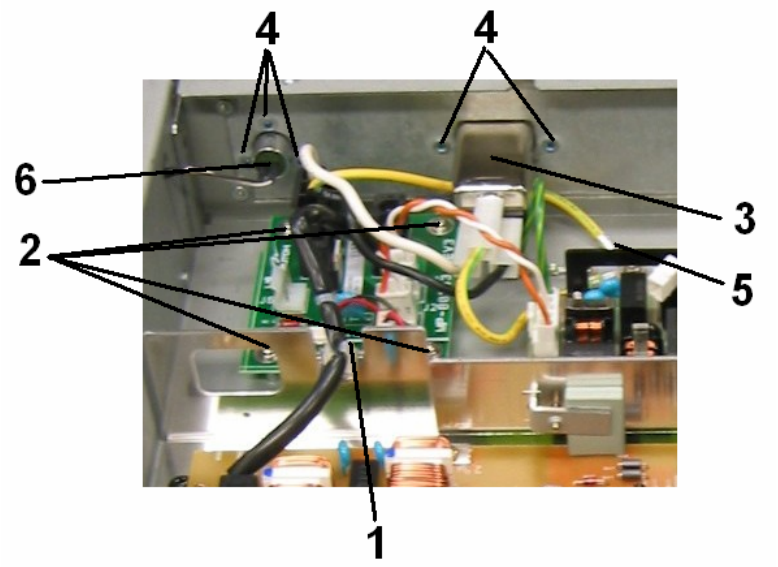
## *4.4.3. Replacing the inlet assembly, inlet board assembly and lever foot SW cable assembly*

**Step 1 :** Follow the instructions in "Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly, PCI_Linux board assembly and cooling fan assembly" to remove the Mainboard assembly.

**Step 2 :** Follow step 2 to 4 in "Replacing the power source board assembly" to remove the Mainboard assembly.

**Step 3 :** Remove the connector between the inlet board assembly and the inlet assembly.

**Step 4 :** Remove the 4 screws fixing the inlet board assembly.




| | |
|---|---|
| 1 = Inlet board assembly | 2 = Screws (M3x6) fixing the inlet board assembly |
| 3 = Inlet assembly | 4 = Screws (M3x6) fixing the inlet assembly and lever foot SW cable assembly |
| 5 = Screw (M4x8) fixing the inlet assembly | 6 = Lever foot SW cable assembly |

**Step 5 :** Replace the inlet board assembly.

**Step 6 :** Remove the 3 screws fixing the inlet assembly.

**Step 7 :** Replace the inlet assembly.

**Step 8 :** Remove the 3 screws fixing the lever foot SW cable assembly.

**Step 9 :** Replace the lever foot SW cable assembly.

**Step 10 :** Reinstall all parts in the opposite order of the removal procedure.

## *4.4.4. Replacing the JUNCTION board assembly*

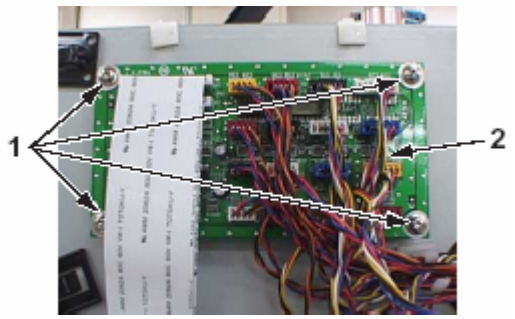
Notes :

- To replace board and connect or disconnect the FFC type cable, you should leave the plug disconnected from the power socket for a while. Otherwise, over-current could be generated and damage the board.
- Remove the following parts before replacing the JUNCTION board assembly.
  - I/H cover: refer to "Removing the I/H cover"
  - Side cover R: refer to "Removing side cover R"

**Step 1 :** Remove following connectors from the JUNCTION board assembly.

| N° | Connector N° | # of pins | Colour | Connected to | Remarks |
|---|---|---|---|---|---|
| 1 | J401 | 30 | White | Mainboard | Lock type or Plug-in |
| 2 | J402 | 30 | White | Mainboard | Lock type or Plug-in |
| 3 | J403 | 4 | White | Ink sensor K | Cartridge 1 |
| 4 | J404 | 4 | Black | Ink sensor C | Cartridge 2 |
| 5 | J405 | 4 | Red | Ink sensor M | Cartridge 3 |
| 6 | J406 | 4 | Yellow | Ink sensor Y | Cartridge 4 |
| 7 | J407 | 4 | Blue | Ink sensor LC | Cartridge 5 |
| 8 | J408 | 5 | White | Ink sensor LM | Cartridge 6 |
| 9 | J409 | 5 | Black | Ink sensor O | Cartridge 7 |
| 10 | J410 | 5 | Red | Ink sensor G | Cartridge 8 |
| 11 | J411 | 5 | Yellow | SC cable K | Cartridge 1 |
| 12 | J412 | 5 | Blue | SC cable C | Cartridge 2 |
| 13 | J413 | 6 | White | SC cable M | Cartridge 3 |
| 14 | J414 | 6 | Black | SC cable Y | Cartridge 4 |
| 15 | J415 | 6 | | SC cable LC | Cartridge 5 |
| 16 | J416 | 6 | Yellow | SC cable LM | Cartridge 6 |
| 17 | J417 | 6 | Blue | SC cable O | Cartridge 7 |
| 18 | J418 | 7 | White | SC cable G | Cartridge 8 |

**Step 2 :** Remove the 4 screws fixing the JUNCTION board assembly.




| | |
|---|---|
| 1 = JUNCTION board assembly | 2 = Screws (M3x6) fixing the JUNCTION board assembly |

**Step 3 :** Replace the JUNCTION board assembly.

**Step 4 :** Reinstall all parts in the opposite order of the removal procedure.

# 4.5. REPLACING THE PF ACTUATOR

## *4.5.1. Replacing the PF motor assembly*

**Caution :**

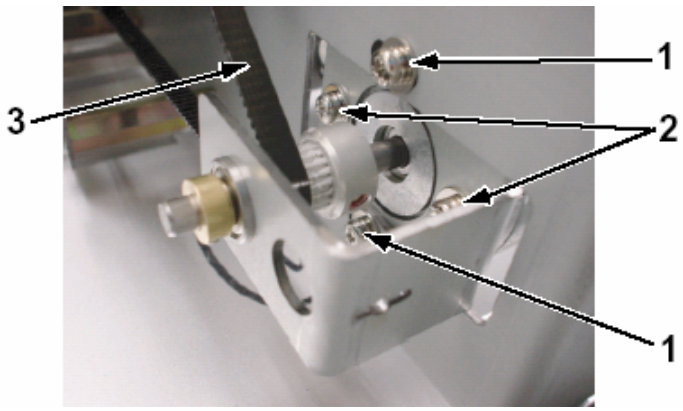
The motor is hot after the product has been operated, so be careful not to burn yourself.

Notes :

- Remove following covers before replacing the parts in the PF motor assembly.
  - Side cover R: refer to "Removing side cover R"
  - Side cover L: refer to "Removing side cover L"
  - Front cover: refer to "Removing the front cover"
  - Carriage cover: refer to "Removing the carriage cover"
  - Y rail cover: refer to "Removing the Y rail cover"
  - Media guide F: refer to "Removing media guide F"

**Step 1 :** Remove the PF motor assembly connector from the PF motor cable assembly.

**Step 2 :** Remove the 2 screws fixing the X motor installation board to the side of the L side frame.




| | |
|---|---|
| 1 = Screws (M4x10) fixing the X motor installation board to the side of the L side frame. | 2 = Screws (M4x10) fixing the PF motor assembly to the X motor installation board. |
| 3 = PF deceleration belt | |

**Step 3 :** Remove the 2 screws fixing the PF motor assembly to the X motor installation board.

**Step 4 :** Replace the PF motor assembly.

Notes :

- When installing the PF motor assembly, move the PF deceleration pulley manually and confirm that the PF deceleration belt is set equally in the center of the PF motor assembly pulley.

**Step 5 :** Reinstall all parts in the opposite order of the removal procedure.

**Step 6 :** Adjust the tension of the PF deceleration belt according to "PF deceleration belt tension adjustment".

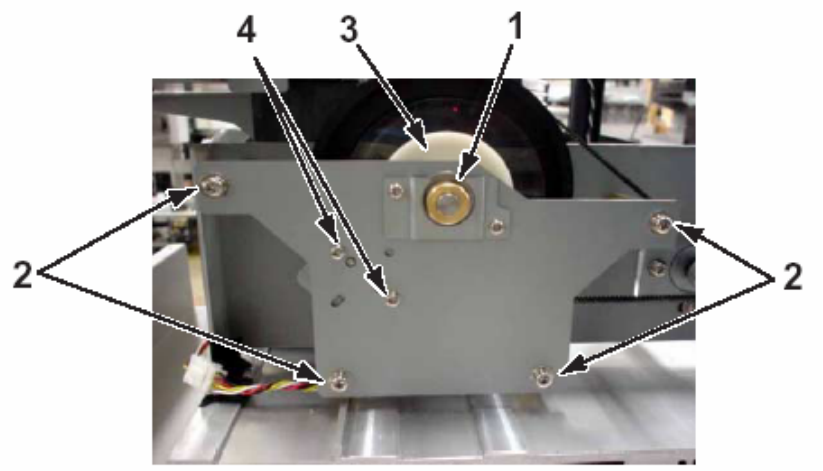
## *4.5.2. Replacing the PF_ENC assembly and PF scale assembly*

Notes :

- Remove the following covers before replacing the PF_ENC assembly.
  - Side cover L: refer to "Removing side cover L"

**Step 1 :** Remove the PF_ENC assembly connector.

**Step 2 :** Remove the 2 screws fixing the PF encoder installation board.




| | |
|---|---|
| 1 = Bearing | 2 = Screws (M3x6) fixing the PF scale installation board |
| 3 = PF scale | 4 = Screws (M4x10) fixing the PF encoder installation board |

**Step 3 :** Remove the PF encoder installation board.

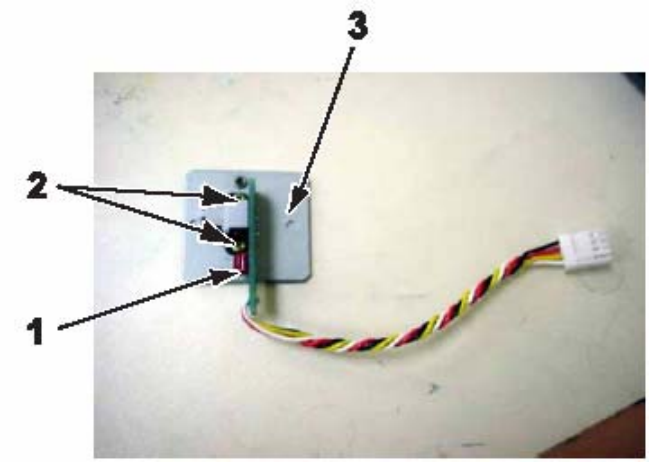
**Step 4 :** Remove the bearing.

**Step 5 :** Remove the 4 screws fixing the PF scale installation board.

**Step 6 :** Remove the PF scale installation board.

**Step 7 :** Replace the PF scale assembly.

**Step 8 :** Remove the screws fixing the PF_ENC assembly to the PF encoder installation board.




| | |
|---|---|
| 1 = PF_ENC assembly | 2 = Screws (M2x6) fixing the PF_ENC assembly to the PF encoder installation board |
| 3 = PF encoder installation board | |

**Step 9 :** Replace the PF_ENC assembly.

Notes :

- When installing the PF_ENC assembly and the PF encoder installation board, make sure they are aligned with the locating bosses.

**Step 10 :** Reinstall all parts in the opposite order of the removal procedure.

**Step 11 :** Adjust the tension of the PF deceleration belt according to "PF deceleration belt tension adjustment".

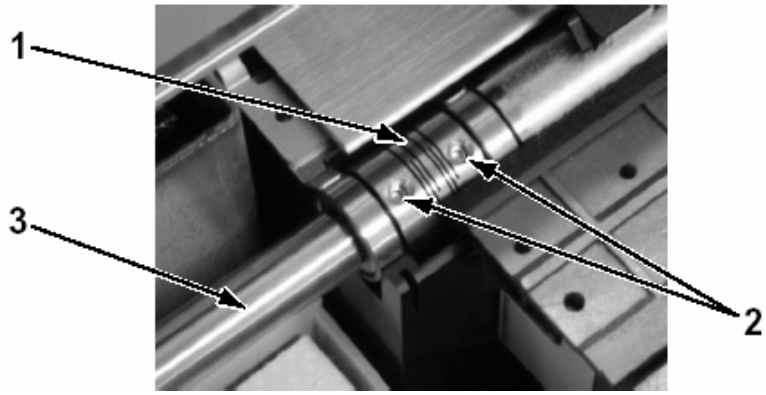
## *4.5.3. Replacing the PF deceleration pulley assembly*

Notes :

- Remove following covers before replacing the parts in the PF motor assembly.
  - Side cover R: refer to "Removing side cover R"
  - Side cover L: refer to "Removing side cover L"
  - Front cover: refer to "Removing the front cover"
  - Carriage cover: refer to "Removing the carriage cover"
  - Y rail cover: refer to "Removing the Y rail cover"
  - Media guide F: refer to "Removing media guide F"

**Step 1 :** Follow step 1 to 6 in "Replacing the PF_ENC assembly and PF scale assembly" to remove the PF scale installation board.

**Step 2 :** Loosen the set screw fixing the coupling.




| | |
|---|---|
| 1 = Coupling | 2 = Set screw fixing the coupling |
| 3 = Y deceleration pulley axis | |

**Step 3 :** Pull the Y deceleration pulley to the opposite side of the origin and then remove the deceleration pulley assembly.

**Step 4 :** Reinstall all parts in the opposite order of the removal procedure.

**Step 5 :** Adjust the tension of the PF deceleration belt according to "PF deceleration belt tension adjustment".

## *4.5.4. Replacing the PF deceleration belt*

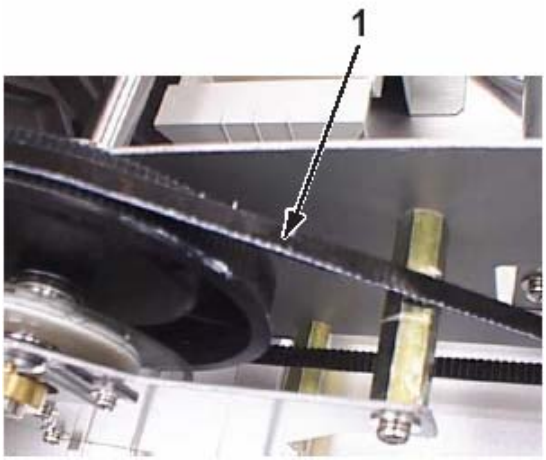
Notes :

- Remove following covers before replacing the parts in the PF motor assembly.
  - Side cover R: refer to "Removing side cover R"
  - Side cover L: refer to "Removing side cover L"
  - Front cover: refer to "Removing the front cover"
  - Carriage cover: refer to "Removing the carriage cover"
  - Y rail cover: refer to "Removing the Y rail cover"
  - Media guide F: refer to "Removing media guide F"

**Step 1 :** Follow the instructions in "Replacing the PF motor assembly" to remove the PF motor.

**Step 2 :** Follow the instructions in "Replacing the PF_ENC assembly and PF scale assembly" to remove the PF_ENC assembly and the PF scale assembly.

**Step 3 :** Replace the PF deceleration belt.




1 = PF deceleration belt

**Step 4 :** Reinstall all parts in the opposite order of the removal procedure.

**Step 5 :** Adjust the tension of the PF deceleration belt according to "PF deceleration belt tension adjustment".

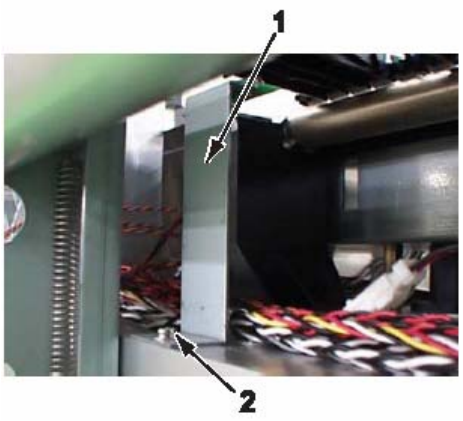
## *4.5.5. Replacing the P_REAR_R sensor assembly and P_REAR_L sensor assembly*

Notes :

- Remove following covers before replacing the P_REAR_R sensor assembly and P_REAR_L sensor assembly.
  - Side cover R: refer to "Removing side cover R"
  - Side cover L: refer to "Removing side cover L"
  - Front cover: refer to "Removing the front cover"
  - Carriage cover: refer to "Removing the carriage cover"
  - Y rail cover: refer to "Removing the Y rail cover"
  - Media guide F: refer to "Removing media guide F"

**Step 1 :** Remove the connectors for the P_REAR_R sensor assembly and P_REAR_L sensor assembly from the Mainboard assembly.

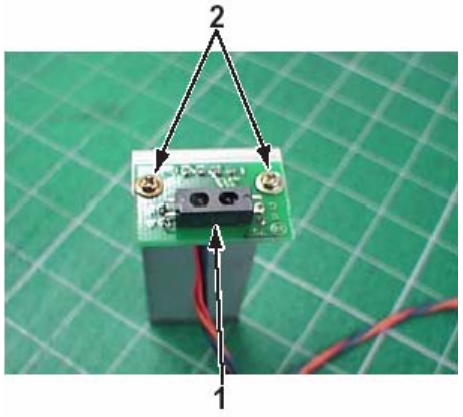
**Step 2 :** Remove the screw fixing the media sensor installation board.




| 1 = Media sensor installation board | 2 = Screw (M3x8) fixing the media sensor installation board |
|---|---|

**Step 3 :** Remove the media sensor installation board.

**Step 4 :** Remove the 2 screws fixing the P_REAR_R sensor assembly.



| 1 = P_REAR_R sensor assembly | 2 = Screws (M2x5) fixing the P_REAR_R sensor assembly |
|---|---|

**Step 5 :** Replace the P_REAR_R sensor assembly.

**Step 6 :** Use the same procedure to replace the P_REAR_L sensor assembly.

**Step 7 :** Reinstall all parts in the opposite order of the removal procedure.

## *4.5.6. Replacing the suction fan assembly*

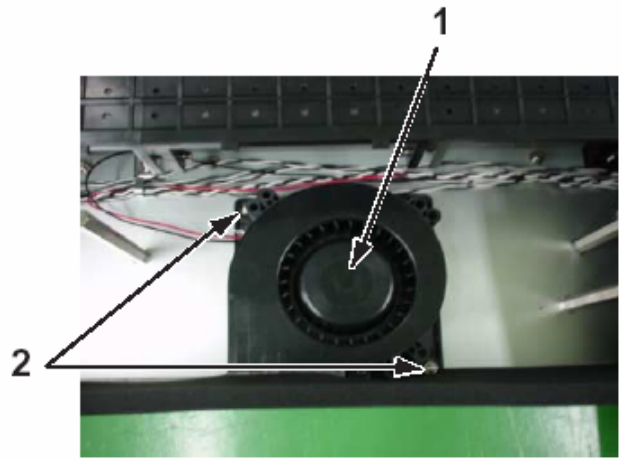
Notes :

- Remove following covers before replacing the suction fan assembly.
  - Side cover R: refer to "Removing side cover R"
  - Side cover L: refer to "Removing side cover L"
  - Front cover: refer to "Removing the front cover"
  - Carriage cover: refer to "Removing the carriage cover"
  - Y rail cover: refer to "Removing the Y rail cover"
  - Media guide F: refer to "Removing media guide F"

**Step 1 :** Remove the suction fan assembly connector from the suction fan cable assembly.

**Step 2 :** If replacing the suction fan cable assembly, first remove the connector from the Mainboard assembly.

**Step 3 :** Remove the 2 screws fixing the suction fan assembly.




| 1 = Suction fan assembly | 2 = Screws (M3x12) fixing the suction fan assembly |
|---|---|

**Step 4 :** Replace the suction fan assembly.

**Step 5 :** Reinstall all parts in the opposite order of the removal procedure.

## *4.5.7. Replacing the lever motor assembly and the arm motor installation board*

**Caution :**

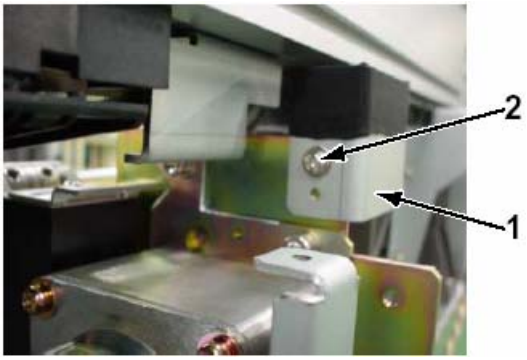
The motor is hot after the product has been operated, so be careful not to burn yourself.

Notes :

- Remove following covers before replacing the lever motor.
  - Side cover R: refer to "Removing side cover R"
  - Side cover L: refer to "Removing side cover L"
  - Front cover: refer to "Removing the front cover"
  - Carriage cover: refer to "Removing the carriage cover"
  - Y rail cover: refer to "Removing the Y rail cover"
  - Media guide F: refer to "Removing media guide F"

**Step 1 :** Remove the lever motor assembly connector.

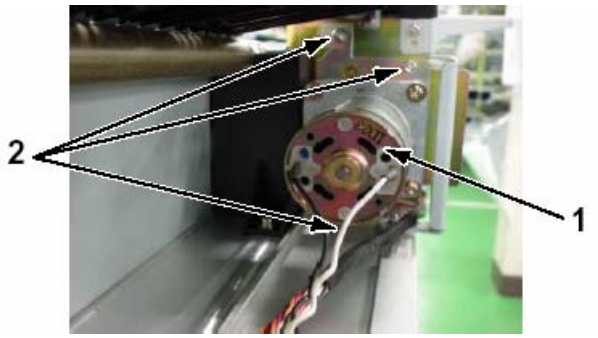
**Step 2 :** Remove the screw fixing the sensor installation board.




| | |
|---|---|
| 1 = Sensor installation board | 2 = Screw (M3x8) fixing the sensor installation board |

**Step 3 :** Remove the sensor installation board.

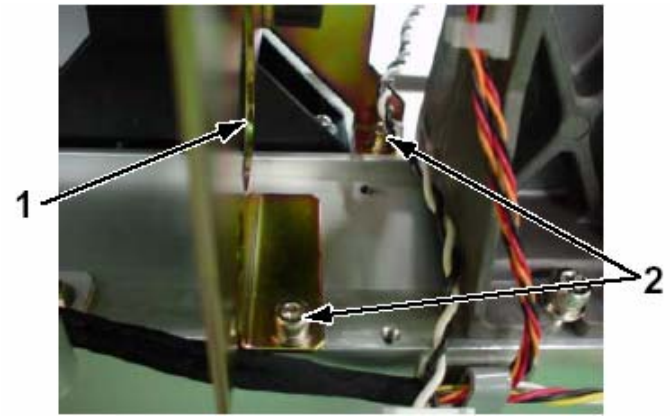
**Step 4 :** Remove the hexagon socket head screws with spring washers (3) fixing the CR motor assembly to the arm motor installation board.



| | |
|---|---|
| 1 = Lever motor assembly | 2 = Hexagon socket head screws with spring washers (M4x10) |

**Step 5 :** Replace the CR motor assembly.

**Step 6 :** Remove the hexagon socket head screws with spring washers (2) fixing the arm motor installation board.




| | |
|---|---|
| 1 = Arm motor installation board | 2 = Hexagon socket head screws with spring washers (M4x10) |

**Step 7 :** Replace the arm motor installation board.

**Step 8 :** Reinstall all parts in the opposite order of the removal procedure.

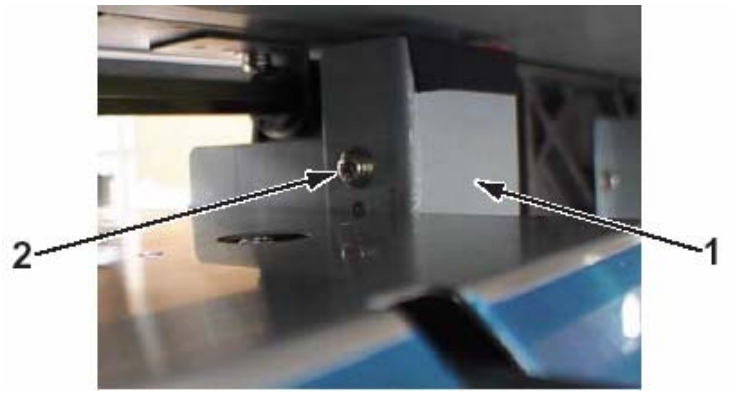
## *4.5.8. Replacing the transmission photosensor*

Notes :

- Remove following covers before replacing the transmission photosensor.
  - Side cover R: refer to "Removing side cover R"
  - Side cover L: refer to "Removing side cover L"
  - Front cover: refer to "Removing the front cover"
  - Carriage cover: refer to "Removing the carriage cover"
  - Y rail cover: refer to "Removing the Y rail cover"

### *(1) Replacing the transmission photosensor (lever motor side)*

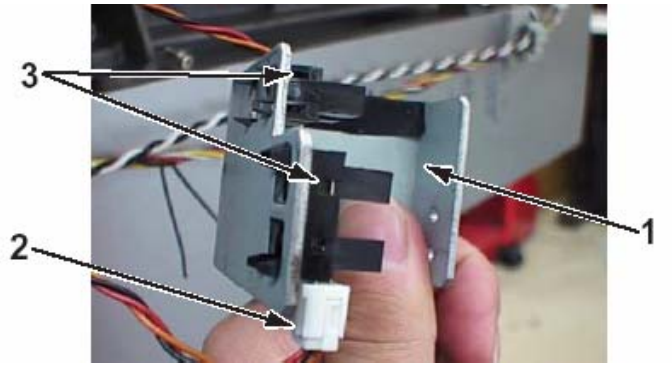
**Step 1 :** Remove the screw fixing the sensor installation board.




| | |
|---|---|
| 1 = Sensor installation board | 2 = Screw (M3x8) fixing the sensor installation board |

**Step 2 :** Remove the sensor installation board.

**Step 3 :** Remove the transmission photosensor from the sensor installation board.




| | |
|---|---|
| 1 = Sensor installation board | 2 = Connector |
| 3 = Transmission photosensor | |

**Step 4 :** Remove the connector from the transmission photosensor.

**Step 5 :** Remove the transmission photosensor.

**Step 6 :** Apply the screw lock to the tab portions of the transmission photosensors to be installed.

**Step 7 :** Reinstall all parts in the opposite order of the removal procedure.

Notes :

- When installing the U/D cable assembly onto the transmission photosensor, be careful not to confuse the connectors.
  - Lever up cable assembly (white): front
  - Lever down cable assembly (blue): rear

## *(2) Replacing the transmission photosensor (CR origin side)*

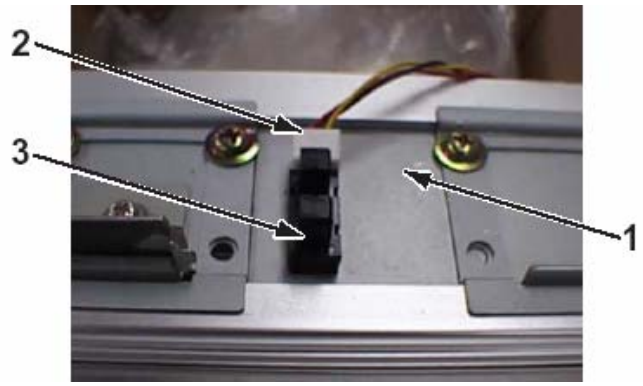
Notes :

- Refer to 'Head Lock Menu'

**Step 1 :** Unlock the head.

**Step 2 :** Move the carriage from the capping position to the left.

**Step 3 :** Remove the transmission photosensor from the ORG sensor installation board.




| | |
|---|---|
| 1 = ORG sensor installation board | 2 = Connector |
| 3 = Transmission photosensor | |

Notes :

- The ORG sensor installation board has been adjusted at the origin in factory. Do not loosen the fixed screws.

**Step 4 :** Remove the connector from the transmission photosensor.

**Step 5 :** Remove the transmission photosensor.

**Step 6 :** Apply the screw lock to the tab portions of the transmission photosensors to be installed.

**Step 7 :** Reinstall all parts in the opposite order of the removal procedure.

## *4.5.9. Replacing the flushing box assembly*

Notes :

- Remove following covers before replacing the flushing box assembly.
  - Side cover R: refer to "Removing side cover R"
  - Side cover L: refer to "Removing side cover L"
  - Front cover: refer to "Removing the front cover"
  - Carriage cover: refer to "Removing the carriage cover"
  - Y rail cover: refer to "Removing the Y rail cover"

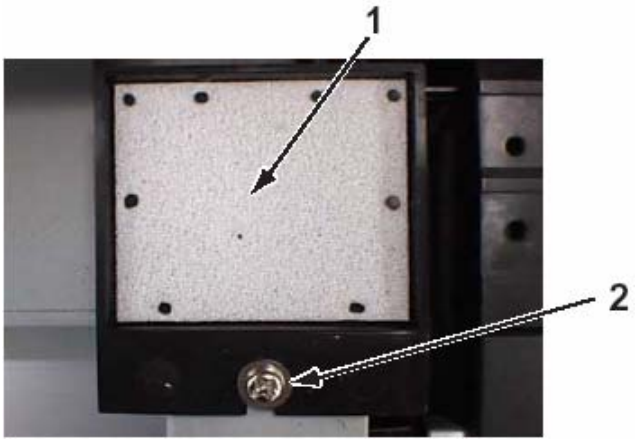
**Step 1 :** Unlock the head.

Notes :

- Refer to 'Head Lock Menu'

**Step 2 :** Move the carriage from the capping position to the left.

**Step 3 :** Remove the screw fixing the flushing box assembly.




| | |
|---|---|
| 1 = Flushing box assembly | 2 = Screw (M3x8) fixing the flushing box assembly |

**Step 4 :** Remove the tube from the flushing box assembly.

**Step 5 :** Replace the flushing box assembly.

**Step 6 :** Reinstall all parts in the opposite order of the removal procedure.

**Step 7 :** Adjust the head and flushing box assembly so that they do not come into contact.

# 4.6. REPLACING THE CR ACTUATOR

## *4.6.1. Replacing the CR motor assembly*

**Caution :**

The motor is hot after the product has been operated, so be careful not to burn yourself.

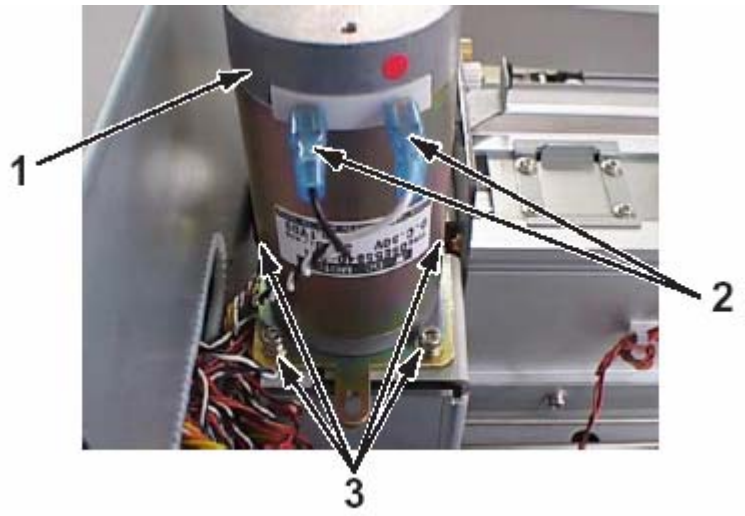
Notes :

- Remove following covers before replacing the CR motor assembly.
  - Side cover R: refer to "Removing side cover R"
  - Side cover L: refer to "Removing side cover L"
  - Front cover: refer to "Removing the front cover"
  - Carriage cover: refer to "Removing the carriage cover"
  - Y rail cover: refer to "Removing the Y rail cover"
  - Media guide F: refer to "Removing media guide F"

**Step 1 :** Remove the CR motor cable assembly connector from the CR motor assembly.

**Step 2 :** Remove the 4 hexagon socket head cap screws fixing the CR motor assembly.

**Step 3 :** Replace the CR motor assembly.




| | |
|---|---|
| 1 = CR motor assembly | 2 = Connector |
| 3 = Hexagon socket head cap screws (M3x6) | |

**Step 4 :** Reinstall all parts in the opposite order of the removal procedure.

**Step 5 :** Adjust the tension of the CR deceleration belt according to "CR deceleration belt tension adjustment".

Notes :

- When installing the CR motor cable assembly connector, install the white cable on the right side as shown in the previous figure.

## *4.6.2. Replacing the steel belt*

**Caution :**

When replacing the steel belt, be careful not to cut your hands by the belt.

Notes :

- Do not damage the steel belt.
- Remove following covers before replacing the steel belt.
  - Side cover R: refer to "Removing side cover R"
  - Side cover L: refer to "Removing side cover L"
  - Front cover: refer to "Removing the front cover"
  - Carriage cover: refer to "Removing the carriage cover"
  - Y rail cover: refer to "Removing the Y rail cover"

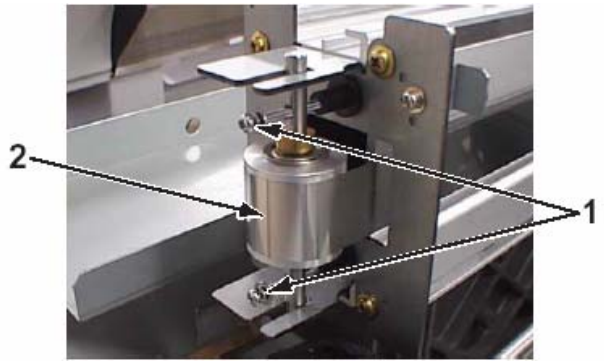
**Step 1 :** Unlock the head.

Notes :

- Refer to 'Head Lock Menu'

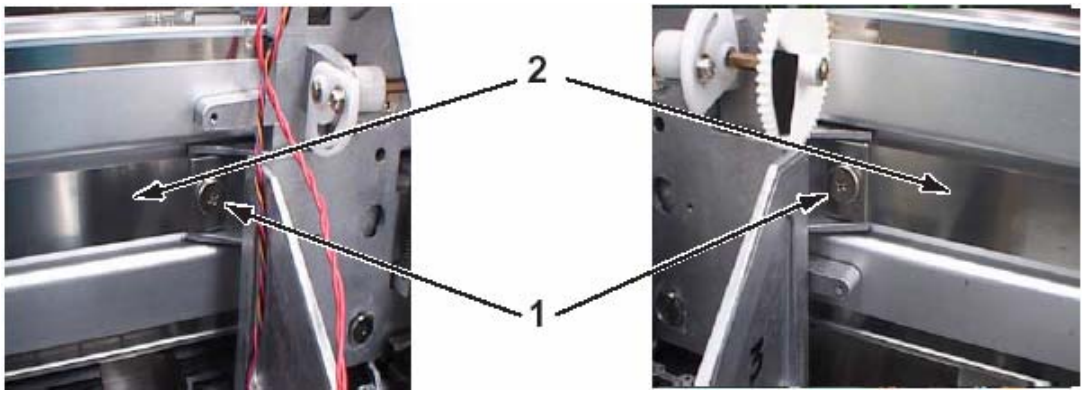
**Step 2 :** Move the carriage from the capping position to the left.

**Step 3 :** Rotate the 2 steel belt adjustment screws counterclockwisely to loosen the steel belt.




| | |
|---|---|
| 1 = Steel belt adjustment screws | 2 = Steel belt |

**Step 4 :** Remove the 2 screws fixing the steel belt.




| | |
|---|---|
| 1 = Screws fixing the steel belt | 2 = Steel belt |

**Step 5 :** Replace the steel belt.

Notes :

- Be careful when handling the steel belt. The steel belt may be cut off when accreting dust to it or creasing it.

**Step 6 :** Reinstall all parts in the opposite order of the removal procedure.

**Step 7 :** Perform steel belt tension adjustment according to "Steel belt tension adjustment".

## 4.6.3. Replacing the SLIDE motor assembly, HD_SLIDE sensor assembly, and slide motor installation board

**Caution :**

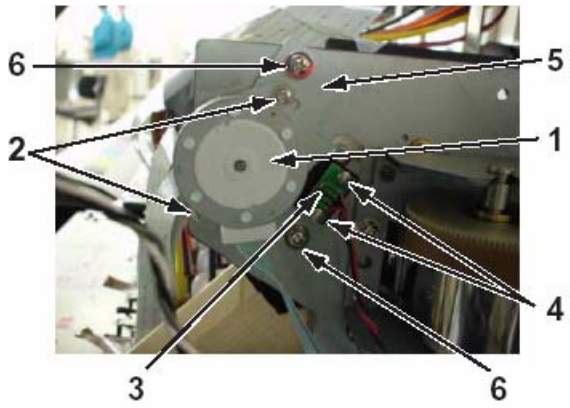
The motor is hot after the product has been operated, so be careful not to burn yourself.

Notes :

- Remove following covers before replacing the SLIDE motor assembly, HD_SLIDE sensor assembly, and slide motor installation board.
  - Side cover R: refer to "Removing side cover R"
  - Side cover L: refer to "Removing side cover L"
  - Front cover: refer to "Removing the front cover"
  - Carriage cover: refer to "Removing the carriage cover"
  - Y rail cover: refer to "Removing the Y rail cover"

**Step 1 :** Remove the connectors on the SLIDE motor assembly and HD_SLIDE sensor assembly.

**Step 2 :** Remove the 2 screws fixing the SLIDE motor assembly.




| | |
|---|---|
| 1 = SLIDE motor assembly | 2 = Screws (M3x6) fixing the SLIDE motor assembly |
| 3 = HD_SLIDE sensor assembly | 4 = Screws (M2x8) fixing the HD_SLIDE sensor assembly |
| 5 = Slide motor installation board | 6 = Screws (M4x6) fixing the slide motor installation board |

**Step 3 :** Replace the SLIDE motor assembly.

**Step 4 :** Remove the 2 screws fixing the HD_SLIDE sensor assembly.

**Step 5 :** Replace the HD_SLIDE sensor assembly.

**Step 6 :** Remove the 2 screws fixing the slide motor installation board.

**Step 7 :** Replace the slide motor installation board.

**Step 8 :** Reinstall all parts in the opposite order of the removal procedure.

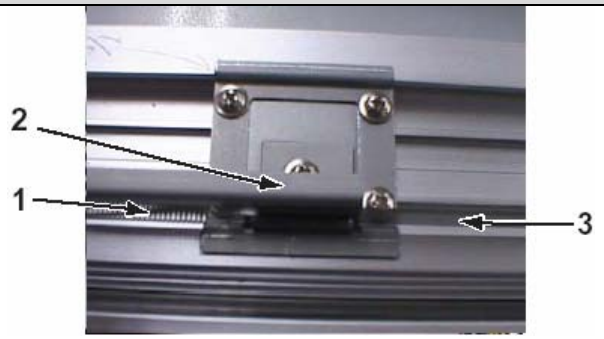
**Step 9 :** Make sure that the Idler moves smoothly.

## *4.6.4. Replacing the T fence*

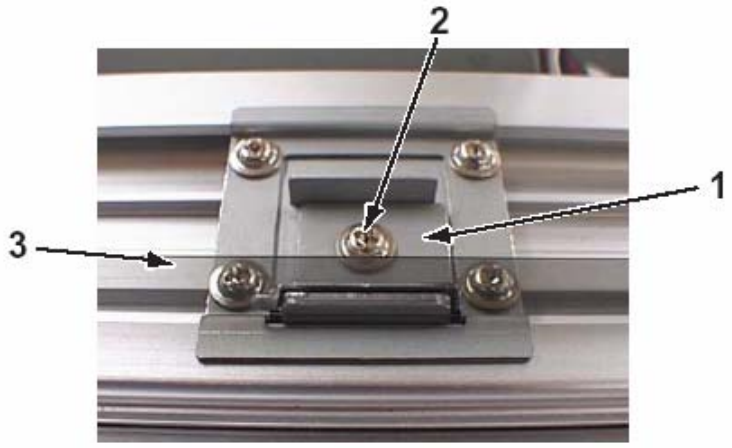
Notes :

- Remove following covers before replacing the T fence.
  - Side cover R: refer to "Removing side cover R"
  - Side cover L: refer to "Removing side cover L"
  - Front cover: refer to "Removing the front cover"
  - Carriage cover: refer to "Removing the carriage cover"
  - Y rail cover: refer to "Removing the Y rail cover"

**Step 1 :** Remove the T fence from the T fence spring hook on the side of the L side frame.

| Falcon II Outdoor 2 heater | Falcon II Outdoor 4 heater |
|---|---|
|  | |
| 1 = T fence spring | 2 = T fence spring hook |
| 3 = T fence | |

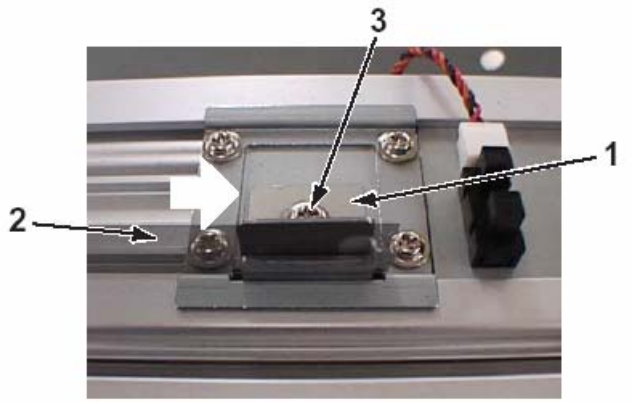
**Step 2 :** Remove the screw fixing the T fence push plate.




| | |
|---|---|
| 1 = T fence push plate | 2 = Screw (M3x6) fixing the T fence push plate |
| 3 = T fence | |

**Step 3 :** Remove the T fence from the hook.

**Step 4 :** Remove the screw fixing the T fence stationary plate.




| | |
|---|---|
| 1 = T fence stationary plate | 2 = T fence |
| 3 = Screw (M3x6) fixing the T fence stationary plate | |

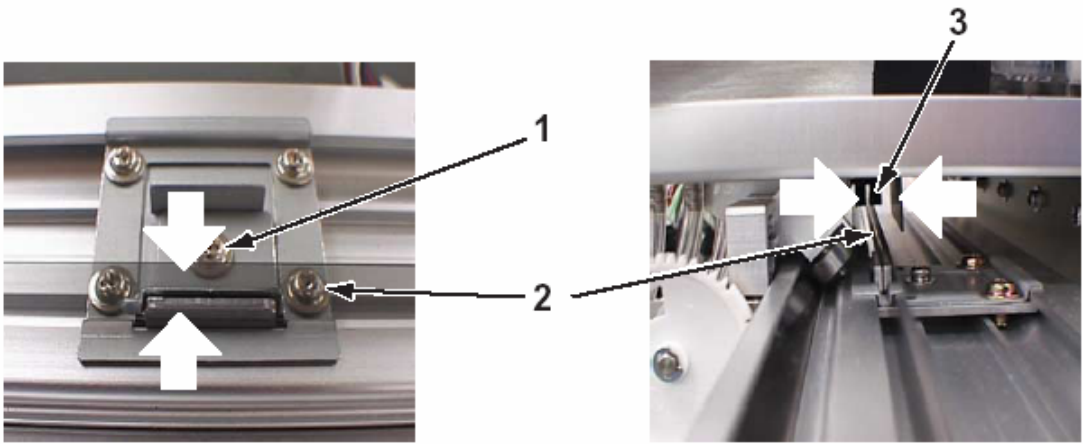
**Step 5 :** Remove the T fence from the hook.

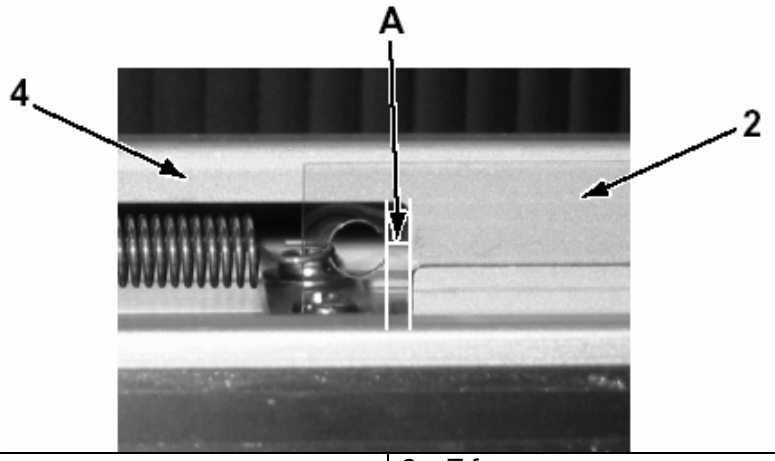
**Step 6 :** Pull out the T fence in the direction of the arrow as shown in the previous figure while being careful not to damage the CR_ENC assembly.

**Step 7 :** Reinstall all parts in the opposite order of the removal procedure.

Notes :

- When installing the T fence, pay attention to the following :
  - When there is a film on the T fence, remove the film and install the T fence.
  - Properly install the T fence to the hooks on the T fence stationary plate. Refer to the figure in step 2.
  - The T fence and the hooks on the stationary plate must have a loose fit.
  - When securing the stationary plate with screws, it must be loosened enough so the T fence can be moved.
  - Insert the T fence into the hooks on the T fence push plate and the CR_ENC assembly. Refer to the following figure.
  - Fix the T fence spring hook so that distance A of following diagram is about 1mm.




| | |
|---|---|
| 1 = T fence push plate | 2 = T fence |
| 3 = CR_ENC assembly | 4 = T fence spring hook |

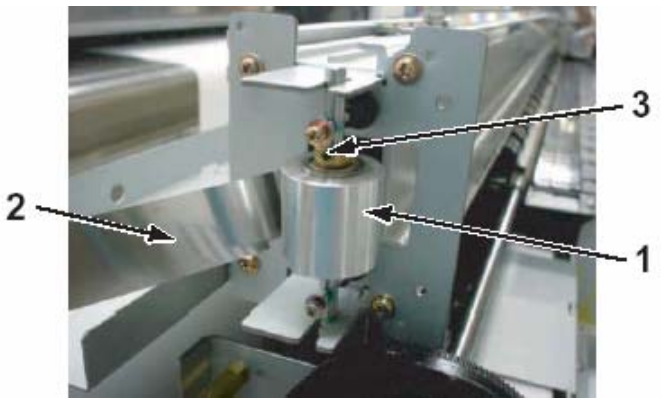
## *4.6.5. Replacing the CR slave pulley assembly*

Notes :

- Remove following covers before replacing the CR slave pulley assembly.
  - Side cover R: refer to "Removing side cover R"
  - Side cover L: refer to "Removing side cover L"
  - Front cover: refer to "Removing the front cover"
  - Carriage cover: refer to "Removing the carriage cover"
  - Y rail cover: refer to "Removing the Y rail cover"

**Step 1 :** Follow the instructions in "Replacing the steel belt" to remove the steel belt.

**Step 2 :** Replace the CR slave pulley assembly.




| | |
|---|---|
| 1 = CR slave pulley assembly | 2 = Steel belt |
| 3 = Bearing stopper | |

**Step 3 :** Reinstall all parts in the opposite order of the removal procedure.

**Step 4 :** Perform steel belt tension adjustment according to "Steel belt tension adjustment".

Notes :

- Be careful when handling the steel belt. The steel belt may be cut off when accreting dust to it or creasing it.
- The driven pulley shaft is installed one way only. Refer to "Service Parts List/Exploded Views/Configuration Diagrams", to install it correctly so that the bearing stoppers are on top.
- After installing the CR slave pulley assembly, move the carriage to the left and right manually to confirm that the steel belt has been set equally in the center of the CR actuator pulley and the CR slave pulley assembly.

## *4.6.6. Replacing the CR actuator pulley and the CR deceleration belt*

Notes :

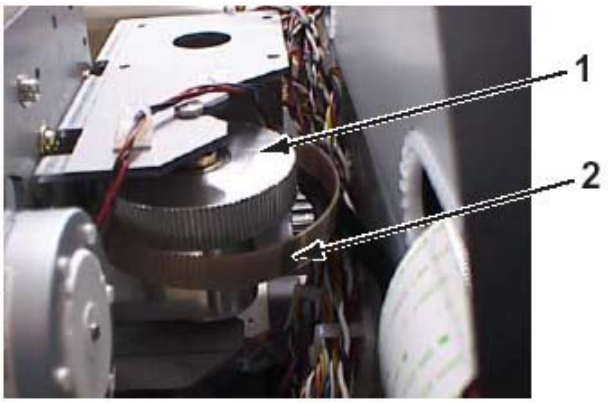
- Remove following covers before replacing the CR slave pulley.
  - Side cover R: refer to "Removing side cover R"
  - Side cover L: refer to "Removing side cover L"
  - Front cover: refer to "Removing the front cover"
  - Carriage cover: refer to "Removing the carriage cover"
  - Y rail cover: refer to "Removing the Y rail cover"

**Step 1 :** Follow the instructions in "Replacing the CR motor assembly" to remove the CR motor assembly.

**Step 2 :** Follow the instructions in "Replacing the steel belt" to remove the steel belt.

**Step 3 :** Replace the CR actuator pulley.

**Step 4 :** Replace the CR deceleration belt.




| | |
|---|---|
| 1 = CR slave pulley | 2 = CR deceleration belt |

**Step 5 :** Reinstall all parts in the opposite order of the removal procedure.

**Step 6 :** Adjust the tension of the CR deceleration belt according to "CR deceleration belt tension adjustment".

Notes :

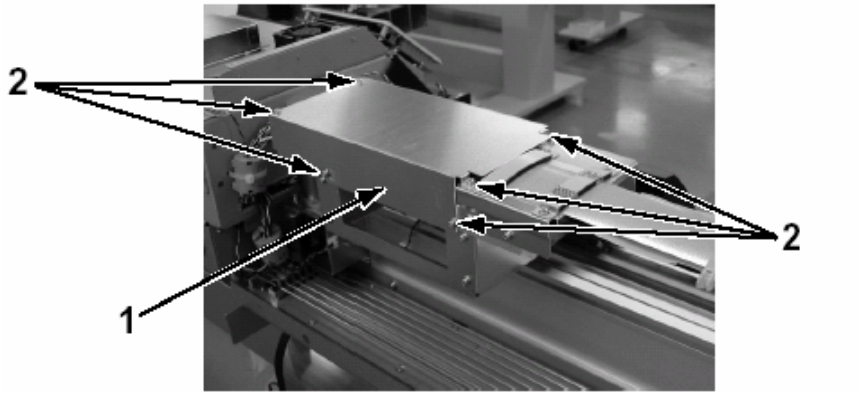
- After installing the CR actuator pulley assembly, move the carriage to the left and right manually to confirm that the steel belt has been set equally in the center of the CR actuator pulley and the CR slave pulley assembly.

## *4.6.7. Replacing the steel bearer, tube guide, CR tape power cable and ink tube*

Notes :

- To replace the board and connect or disconnect the FFC type cable, you should leave the plug disconnected from the power socket for a while. Otherwise, over-current could be generated and damage board.
- Remove following covers before replacing the steel bearer, tube guide, CR tape power cable, and ink tube.
  - Side cover R: refer to "Removing side cover R"
  - Side cover L: refer to "Removing side cover L"
  - Front cover: refer to "Removing the front cover"
  - Carriage cover: refer to "Removing the carriage cover"
  - Y rail cover: refer to "Removing the Y rail cover"

**Step 1 :** Remove the 8 screws fixing the CR cover.

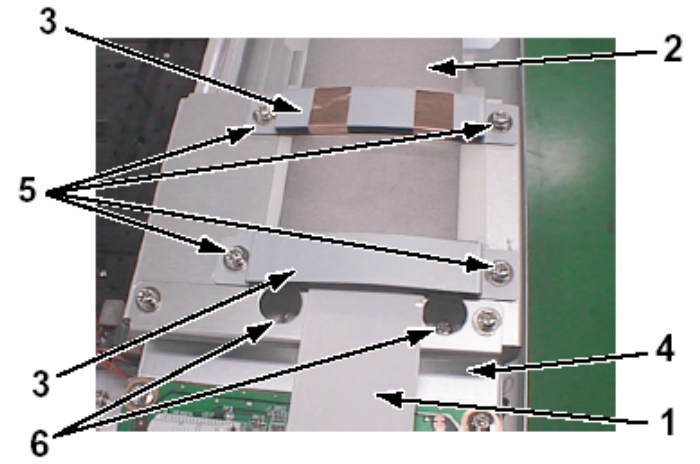



| | |
|---|---|
| 1 = CR cover | 2 = Screws (M3x8) fixing the CR cover |

**Step 2 :** Remove the CR tape power cable connector from the CR board assembly and Mainboard assembly.

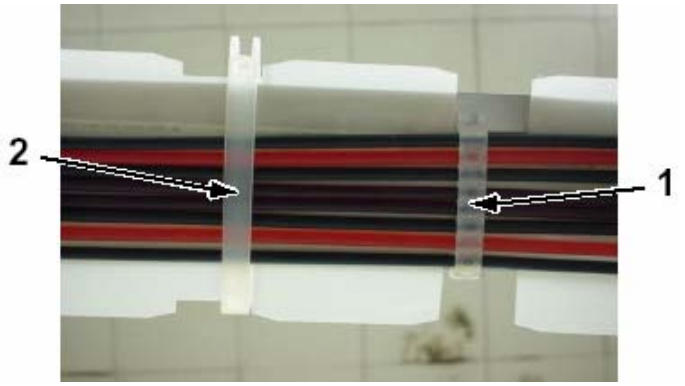
**Step 3 :** Remove the 2 screws fixing cable push plate.

**Step 4 :** Remove the 2 screws fixing the tube clamp.




| | |
|---|---|
| 1 = CR tape power cable | 2 = Steel bearer |
| 3 = Cable push plate | 4 = Screws fixing cable push plate (M3x8) |
| 5 = Screws fixing tube clamp (M3x8) | |

**Step 5 :** Completely remove tube bundles 1 and 2.




| | |
|---|---|
| 1 = Tube bundle | 2 = Tube bundle 2 |

**Step 6 :** Remove the 4 screws fixing the tube clamp.

**Step 7 :** Remove the tube clamp.

**Step 8 :** Remove the coupling screws, O-ring and ink tube from the coupling.

**Step 9 :** Replace the ink tube.

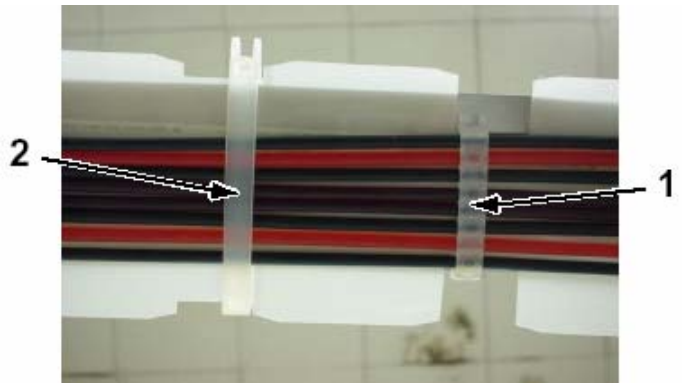
**Step 10 :** Remove the 2 screws fixing the cable clamp.

**Step 11 :** Replace the steel bearing.

**Step 12 :** Replace the tube guide.

**Step 13 :** Remove the pipe clamp.

**Step 14 :** Replace the CR tape power cable.




| | |
|---|---|
| 1 = Tube push plate | 2 = Cable clamp |
| 2 = Pipe clamp | 3 = Coupling, O-ring, coupling screws |
| 4 = Screws fixing tube push plate (M3x8) | 4 = Screws fixing tube cramp (M3x20) |

**Step 15 :** Reinstall all parts in the opposite order of the removal procedure.

Notes :

- The CR tape power cables must be bundled during installation so that they can not move.
- The edge of the tube push plate must be upside when installed.
- You should soak the O-ring in cleaning liquid once gain before installing it.

## *4.6.8. Replace the cover R sensor assembly and the cover L sensor assembly*

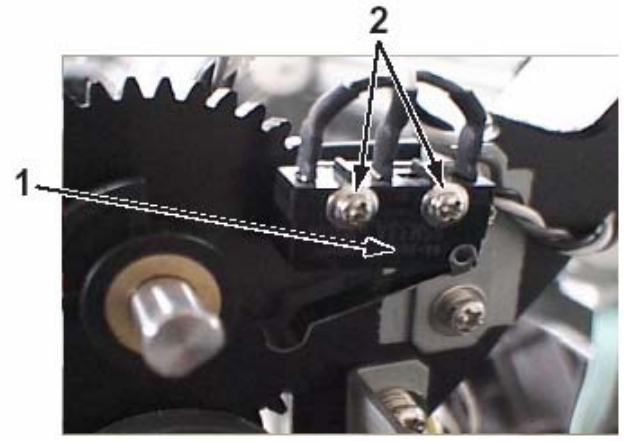
Notes :

- Remove following covers before replacing the cover R sensor assembly and the cover L sensor assembly.
  - Side cover R: refer to "Removing side cover R"
  - Side cover L: refer to "Removing side cover L"
  - Front cover: refer to "Removing the front cover"
  - Carriage cover: refer to "Removing the carriage cover"
  - Y rail cover: refer to "Removing the Y rail cover"

### *(1) Replacing the cover R sensor assembly*

**Step 1 :** Remove the cover R sensor assembly connector from the Mainboard assembly.

**Step 2 :** Remove the 2 screws fixing the cover R sensor assembly.




| | |
|---|---|
| 1 = Cover R sensor assembly | 2 = Screws (M2x8) fixing the cover R sensor assembly |

**Step 3 :** Replace the cover R sensor assembly.

**Step 4 :** Reinstall all parts in the opposite order of the removal procedure.

**Step 5 :** Perform cover sensor adjustment according to "Cover sensor adjustment".

### *(2) Replacing the cover L sensor assembly*

**Step 1 :** Remove media guide F.

**Step 2 :** Remove the cover L sensor assembly connector from the cover L cable.

**Step 3 :** Remove the 2 screws fixing the cover L sensor assembly.

| | |
|---|---|
| 1 = Cover L sensor assembly | 2 = Screws (M2x8) fixing the cover L sensor assembly |

**Step 4 :** Replace the cover L sensor assembly.

**Step 5 :** Reinstall all parts in the opposite order of the removal procedure.

**Step 6 :** Perform cover sensor adjustment according to "Cover sensor adjustment".

# 4.7. REPLACING THE CURSOR

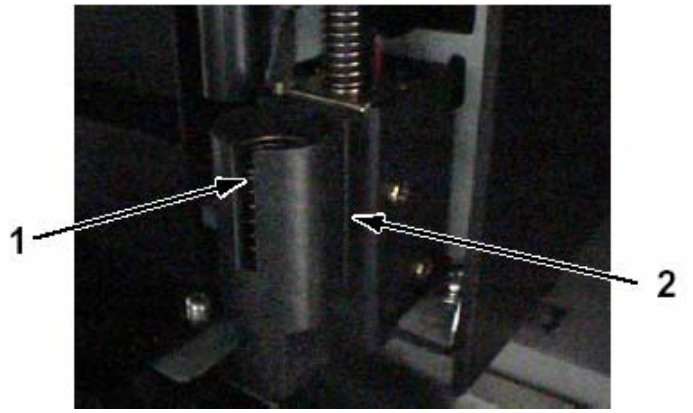
## *4.7.1. Replacing the cutter holder, cutter spring, cutter cap, solenoid assembly and solenoid spring*

*(1) Replacing the cutter spring*

**Step 1 :** Open the front cover.

**Step 2 :** Remove the cutter blade from the cutter holder.

**Step 3 :** Remove the cutter spring from the cutter holder.




| | |
|---|---|
| 1 = Cutter spring | 2 = Cutter holder |

**Step 4 :** Replace the cutter spring.

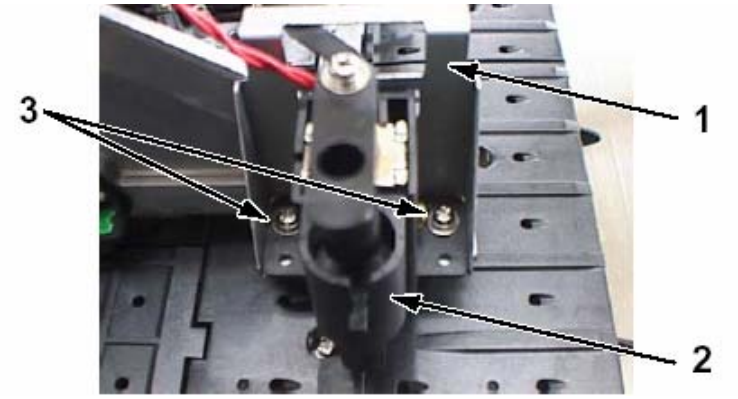
**Step 5 :** Reinstall all parts in the opposite order of the removal procedure.

*(2) Replacing the cutter holder, cutter cap, solenoid assembly and solenoid spring*

Notes :

- Remove following covers before replacing the cutter holder, cutter cap, solenoid assembly, and solenoid spring.
  - Side cover R: refer to "Removing side cover R"
  - Side cover L: refer to "Removing side cover L"
  - Front cover: refer to "Removing the front cover"
  - Carriage cover: refer to "Removing the carriage cover"
  - Y rail cover: refer to "Removing the Y rail cover"
  - Head cover: refer to "Removing the head cover"

**Step 1 :** Remove the 2 screws fixing the cutter holder and holder support.



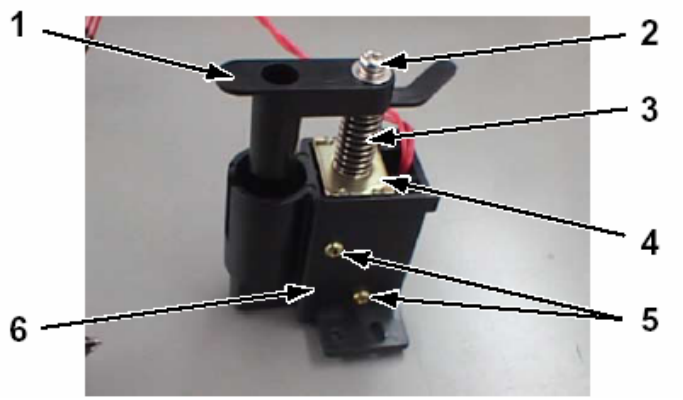

| | |
|---|---|
| 1 = Holder support | 2 = Cutter holder |
| 3 = Screws (M3x6) fixing the cutter holder and holder support | |

**Step 2 :** Remove the cutter holder.

**Step 3 :** Remove the cutter blade and cutter spring from the cutter holder.

**Step 4 :** Remove the cutter cap and Solenoid spring.

**Step 5 :** Remove the screw fixing the solenoid assembly to the cutter cap.




| | |
|---|---|
| 1 = Cutter cap | 2 = Screws (M3x6) fixing the solenoid assembly to the cutter cap |
| 3 = Solenoid spring | 4 = Solenoid assembly |
| 5 = Screws (M2x4) fixing the solenoid assembly to the cutter holder | 6 = Cutter holder |

**Step 6 :** Replace the cutter cap and solenoid spring.

**Step 7 :** Remove the 2 screws fixing the solenoid assembly to the cutter holder.

**Step 8 :** Use a screwdriver to push the solenoid assembly up from the hole on the cutter holder side.

**Step 9 :** Replace the solenoid assembly.

**Step 10 :** Reinstall all parts in the opposite order of the removal procedure.

**Step 11 :** Adjust the cutter according to "Cutter adjustment".

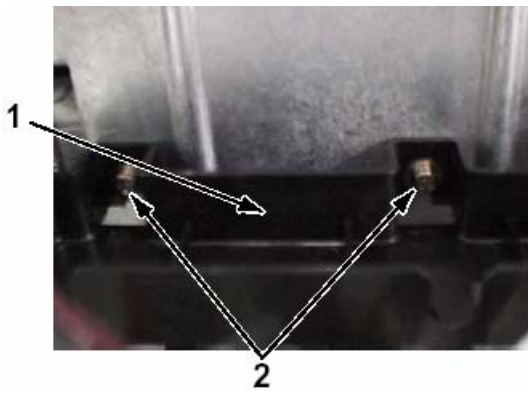
## *4.7.2. Replacing the print head assembly and head tape power cable*

Notes :

- To replace the board and connect or disconnect the FFC type cable, you should leave the plug disconnected from the power socket for a while. Otherwise, over-current could be generated and damage board.
- Remove following covers before replacing the print head assembly and head tape power cable.
  - Side cover R: refer to "Removing side cover R"
  - Side cover L: refer to "Removing side cover L"
  - Front cover: refer to "Removing the front cover"
  - Carriage cover: refer to "Removing the carriage cover"
  - Y rail cover: refer to "Removing the Y rail cover"
  - Head cover: refer to "Removing the head cover"
- The print head assembly has been pre-adjusted. Do not disassemble it.

**Step 1 :** Drain the ink from all ink paths according to "Head wash menu".

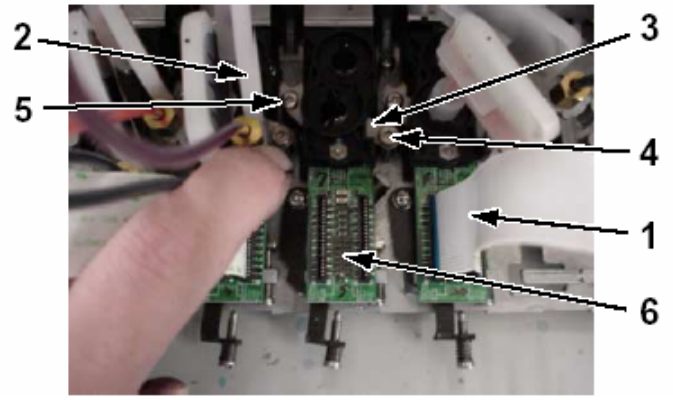
**Step 2 :** Loosen the 2 screws fixing the damper clamp.




| | |
|---|---|
| 1 = Damper clamp | 2 = Screws (M3x6) fixing the damper clamp |

**Step 3 :** Remove the damper clamp.

**Step 4 :** Remove the head tape power cable.




| | |
|---|---|
| 1 = Head tape power cable | 2 = Damper assembly |
| 3 = Head stationary plate / head spacer | 4 = Step-bore screw |
| 5 = Screws (M2.6x5) fixing the head stationary plate | 6 = Print head assembly |

**Step 5 :** Remove the damper assembly from the print head assembly.

**Step 6 :** Remove the screw and step-bore screw fixing the head stationary plate.

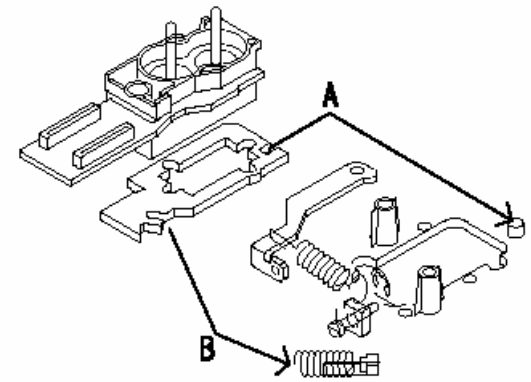
**Step 7 :** Remove the rotation adjustment spring under the head with small flat-head driver or another tool.

**Step 8 :** Replace the print head assembly.

**Step 9 :** Reinstall all parts in the opposite order of the removal procedure.

Notes :

- Place the removed damper assembly facing upward and fix with tape or place it in a container to prevent the ink from leaking. Ink adhesion on board may cause faulty print head.
- Align the head tape power cables one by one to each head and paste together with double-faced tape.
- Make sure that the head does not float when installing the head.




- A : Insert the concave portion of the head base in the rear of the cursor convex portion of the cursor.
- B : Insert the rotation adjustment spring into the convex portion of the head base on the right front.

**Step 10 :** Perform head precision adjustment according to "Head precision adjustment".

## *4.7.3. Replacing the H ink tube, tube branch and damper assembly*

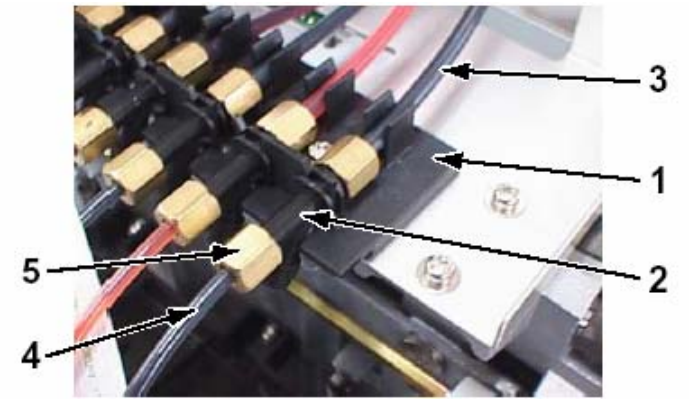
Notes :

- Remove following covers before replacing the H ink tube, tube branch, and damper assembly.
  - Side cover R: refer to "Removing side cover R"
  - Side cover L: refer to "Removing side cover L"
  - Front cover: refer to "Removing the front cover"
  - Carriage cover: refer to "Removing the carriage cover"
  - Y rail cover: refer to "Removing the Y rail cover"
  - Head cover: refer to "Removing the head cover"

**Step 1 :** Drain the ink from all ink paths according to "Head wash menu".

**Step 2 :** Follow step 1 in "Replacing the print head assembly and head tape power cable" to remove the damper clamp.

**Step 3 :** Remove the ink tube and tube branch from the branch fixing material.

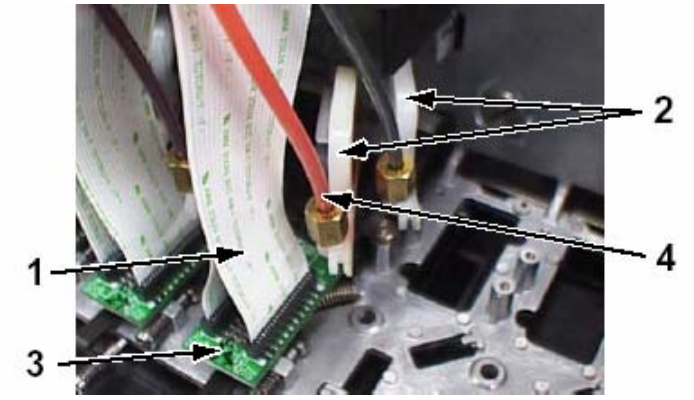



| | |
|---|---|
| 1 = Branch fixing material | 2 = Tube branch |
| 3 = Ink tube | 4 = H ink tube |
| 5 = Coupling screw, O-ring | |

**Step 4 :** Remove the coupling screw and O-ring on the ink tube and the H ink tube sides from the tube branch.

**Step 5 :** Replace the tube branch.

**Step 6 :** Remove the damper assembly from the print head assembly.




| | |
|---|---|
| 1 = Head tape power cable | 2 = Damper assembly |
| 3 = Print head assembly | 4 = H ink tube, O-ring |

**Step 7 :** Remove the H ink tube, coupling screw and O-ring from the damper assembly.

**Step 8 :** Replace the damper assembly.

**Step 9 :** Replace the H ink tube and O-ring.

Notes :

- Please soak the O-ring in cleaning liquid before installation.

**Step 10 :** Reinstall all parts in the opposite order of the removal procedure.

Notes :

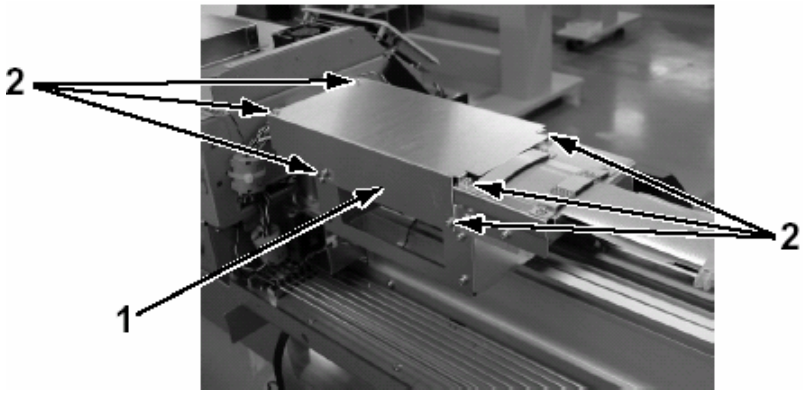
- When tightening coupling screws, finger-tighten those. If using tools, it may result in cracking where the screws fix damper and fail to fill the ink.
- Do not grasp the film area of the damper strongly. Doing so may cause faulty damper and fail to print.

## *4.7.4. Replacing the CR board assembly*

Notes :

- To replace the board and connect or disconnect the FFC type cable, you should leave the plug disconnected from the power socket for a while. Otherwise, over-current could be generated and damage board
- Remove following covers before replacing the CR board assembly.
  - Side cover R: refer to "Removing side cover R"
  - Side cover L: refer to "Removing side cover L"
  - Front cover: refer to "Removing the front cover"
  - Carriage cover: refer to "Removing the carriage cover"
  - Y rail cover: refer to "Removing the Y rail cover"

**Step 1 :** Remove the 8 screws fixing the CR cover.




| | |
|---|---|
| 1 = CR cover | 2 = Screws (M3x8) fixing the CR cover |

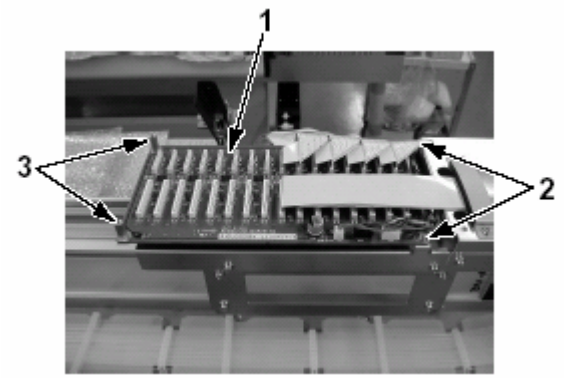
**Step 2 :** Remove following connectors from the CR board.

| N° | Connector N° | # of pins | Colour | Connected to | Remarks |
|---|---|---|---|---|---|
| 1 | J201 | 30 | White or Black | Mainboard | Lock type or Plug-in |
| 2 | J202 | 30 | White or Black | Mainboard | Lock type or Plug-in |
| 3 | J203 | 30 | White or Black | Mainboard | Lock type or Plug-in |
| 4 | J204 | 30 | White or Black | Mainboard | Lock type or Plug-in |
| 5 | J205 | 30 | White or Black | Mainboard | Lock type or Plug-in |
| 6 | J206 | 30 | White or Black | Mainboard | Lock type or Plug-in |
| 7 | J207 | 30 | White or Black | Mainboard | Lock type or Plug-in |
| 8 | J208 | 30 | White or Black | Mainboard | Lock type or Plug-in |
| 9 | J209 | 30 | White or Black | Mainboard | Lock type or Plug-in |
| 10 | J210 | 30 | White or Black | Mainboard | Lock type or Plug-in |
| 11 | J211 | 30 | White or Black | Mainboard | Lock type or Plug-in |
| 12 | J212 | 30 | White or Black | Mainboard | Lock type or Plug-in |
| 13 | J213 | 30 | White or Black | Mainboard | Lock type or Plug-in |
| 14 | J214 | 30 | White or Black | Mainboard | Lock type or Plug-in |
| 15 | J215 | 30 | White or Black | Mainboard | Lock type or Plug-in |
| 16 | J216 | 30 | White or Black | Mainboard | Lock type or Plug-in |
| 17 | J217 | 21 | White or Black | I160B head | |

| | | | | | |
|---|---|---|---|---|---|
| 18 | J218 | 21 | White or Black | I160B head | |
| 19 | J219 | 21 | White or Black | I160B head | |
| 20 | J220 | 21 | White or Black | I160B head | |
| 21 | J221 | 21 | White or Black | I160B head | |
| 22 | J222 | 21 | White or Black | I160B head | |
| 23 | J223 | 21 | White or Black | I160B head | |
| 24 | J224 | 21 | White or Black | I160B head | |
| 25 | J225 | 21 | White or Black | I160B head | |
| 26 | J226 | 21 | White or Black | I160B head | |
| 27 | J227 | 21 | White or Black | I160B head | |
| 28 | J228 | 21 | White or Black | I160B head | |
| 29 | J229 | 21 | White or Black | I160B head | |
| 30 | J230 | 21 | White or Black | I160B head | |
| 31 | J231 | 21 | White or Black | I160B head | |
| 32 | J232 | 21 | White or Black | I160B head | |
| 33 | J233 | 5 | White | CR_ENC | |
| 34 | J234 | 5 | Black | P_EDGE sensor | |
| 35 | J235 | 2 | White | Solenoid | |

**Step 3 :** Remove the 2 screws and 2 hexagon spacers fixing the CR board assembly.

**Step 4 :** Replace the CR board assembly.




| | |
|---|---|
| 1 = CR board assembly | 2 = Screws fixing the CR board assembly (M3x6) |
| 3 = Hexagon spacers fixing the CR boar | |

**Step 5 :** Reinstall all parts in the opposite order of the removal procedure.

## *4.7.5. Replacing the CR_ENC assembly*

Notes :

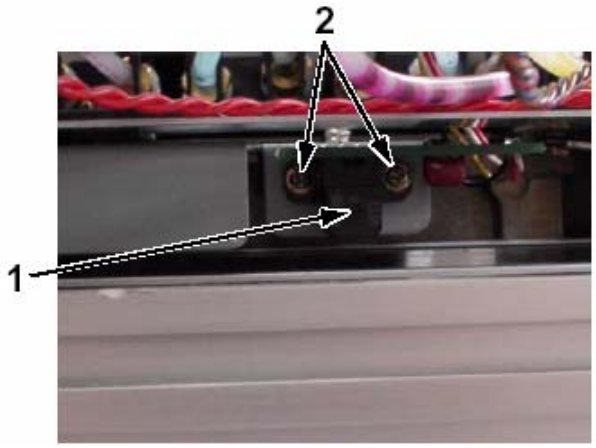
- Remove following cover before replacing the CR_ENC assembly.
  - Side cover L: refer to "Removing side cover L"

**Step 1 :** Follow step 1 in "Replacing the flushing box assembly" to slide the CR cursor to the left.

**Step 2 :** Remove the CR_ENC assembly connector from the CR board assembly.

**Step 3 :** Remove the T fence from the T fence spring, and then from the CR_ENC assembly.

**Step 4 :** Remove the 2 screws fixing the CR_ENC assembly.




| | |
|---|---|
| 1 = CR_ENC assembly | 2 = Screws (M2x12) fixing the CR_ENC assembly |

**Step 5 :** Replace the CR_ENC assembly.

**Step 6 :** Reinstall all parts in the opposite order of the removal procedure.

Notes :

- When removing the T fence from the CR_ENC assembly, be careful not to damage the T fence.

## *4.7.6. Replacing the P_EDGE sensor assembly*

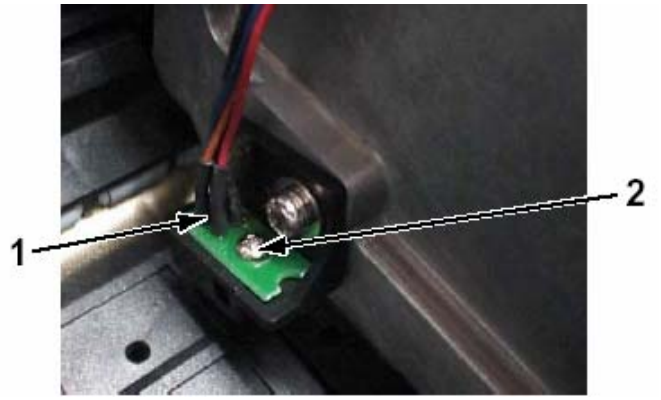
Notes :

- Remove following covers before replacing the P_EDGE sensor Assembly.
  - Side cover R: refer to "Removing side cover R"
  - Side cover L: refer to "Removing side cover L"
  - Front cover: refer to "Removing the front cover"
  - Carriage cover: refer to "Removing the carriage cover"
  - Y rail cover: refer to "Removing the Y rail cover"
  - Head cover: refer to "Removing the head cover"

**Step 1 :** Remove the P_EDGE sensor assembly connector from the CR board assembly.

**Step 2 :** Remove the screw fixing the P_EDGE sensor assembly.

**Step 3 :** Replace the P_EDGE sensor assembly.




| | |
|---|---|
| 1 = P_EDGE sensor assembly | 2 = Screw (M2x12) fixing the P_EDGE sensor assembly |

**Step 4 :** Reinstall all parts in the opposite order of the removal procedure.

**Step 5 :** Perform media sensor sensitivity adjustment according to "Media sensor sensitivity adjustment".

## *4.7.7. Replacing the CR cursor assembly*

Notes :

- Remove following covers before replacing the CR cursor assembly.
  - Side cover R: refer to "Removing side cover R"
  - Side cover L: refer to "Removing side cover L"
  - Front cover: refer to "Removing the front cover"
  - Carriage cover: refer to "Removing the carriage cover"
  - Y rail cover: refer to "Removing the Y rail cover"
  - Head cover: refer to "Removing the head cover"

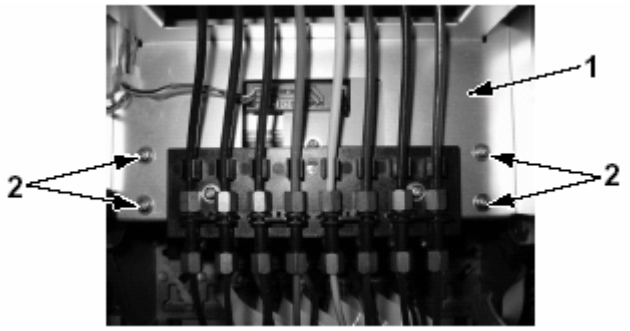
**Step 1 :** Follow the instructions in "Replacing the cutter holder, cutter spring, cutter cap, solenoid assembly, and solenoid spring" to "Replacing the P_EDGE sensor assembly " to remove the parts in cursor components.

**Step 2 :** Slide the CR cursor assembly to the opposite side of the home position.

**Step 3 :** Follow the instructions in "Replacing the steel belt" to remove the steel belt from the CR cursor.

**Step 4 :** Remove the 4 screws fixing the CR board installation board.

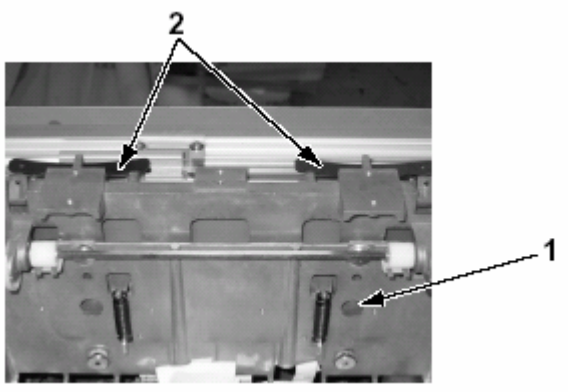
**Step 5 :** Remove the CR board installation board.




| | |
|---|---|
| 1 = CR board installation board | 2 = Screws (M3x8) fixing the CR board installation board |

**Step 6 :** Remove the T fence.

**Step 7 :** Remove the CR blade spring.




| | |
|---|---|
| 1 = CR cursor assembly | 2 = CR blade spring |

**Step 8 :** Replace CR cursor assembly.

**Step 9 :** Reinstall all parts in the opposite order of the removal procedure.

**Step 10 :** Perform head height adjustment according to "Head height adjustment".

## *4.7.8. Replacing the cursor roller assembly*

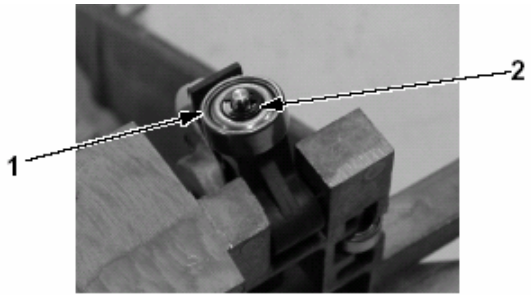
Notes :

- Remove following cover before replacing the Cursor roller assembly.
  - Side cover R: refer to "Removing side cover R"
  - Side cover L: refer to "Removing side cover L"
  - Front cover: refer to "Removing the front cover"
  - Carriage cover: refer to "Removing the carriage cover"
  - Y rail cover: refer to "Removing the Y rail cover"
  - Head cover: refer to "Removing the head cover"

### *4.7.8.1. Replacing the cursor roller assembly (upper 2 cursor rollers)*

**Step 1 :** Follow the instructions in "Replacing the CR cursor assembly " to remove the CR cursor assembly.

**Step 2 :** Remove the E ring fixing the cursor roller assembly (KY-80040).




| | |
|---|---|
| 1 = CR cursor assembly (KY-80040) | 2 = E ring fixing the cursor roller assembly. |

**Step 3 :** Replace the cursor roller assembly (KY-80040).

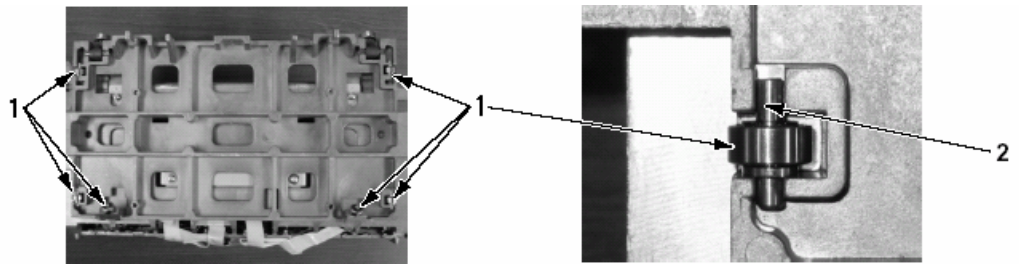
**Step 4 :** Reinstall all parts in the opposite order of the removal procedure.

**Step 5 :** Perform head height adjustment according to "Head height adjustment".

### *4.7.8.2. A. Replacing the cursor roller assembly (6 high-load bearings) : Large bearing type*

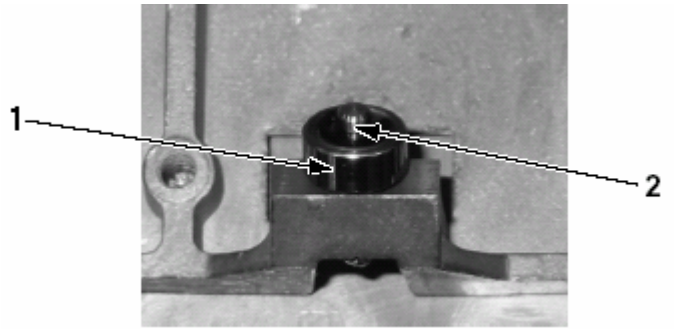
**Step 1 :** Follow the instructions in "Replacing the CR cursor assembly " to remove the CR cursor assembly.

**Step 2 :** Remove the side cursor roller assemblies and B cursor axises together with flat-head driver or another tool.




| | |
|---|---|
| 1 = CR cursor assembly (KY-80040) | 2 = B cursor axis |

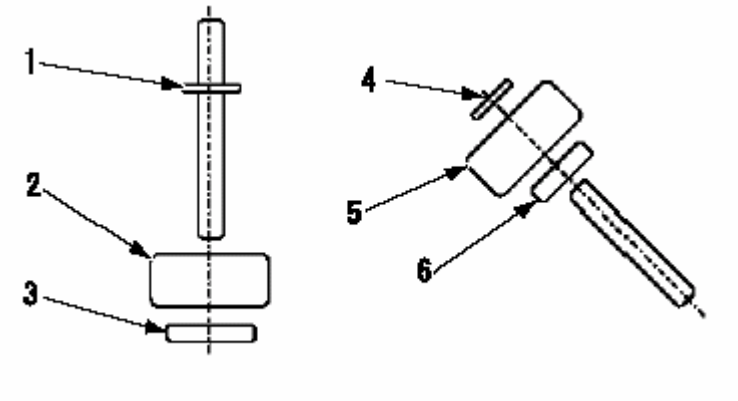
**Step 3 :** Remove the E ring fixing the cursor roller assembly (KY-80040) of downside.




| | |
|---|---|
| 1 = CR cursor assembly (KY-80040) | 2 = E ring fixing the cursor roller assembly. |

**Step 4 :** Replace the cursor roller assembly (KY-80040).

**Step 5 :** Install the spacers and the other parts as shown in the following figure.

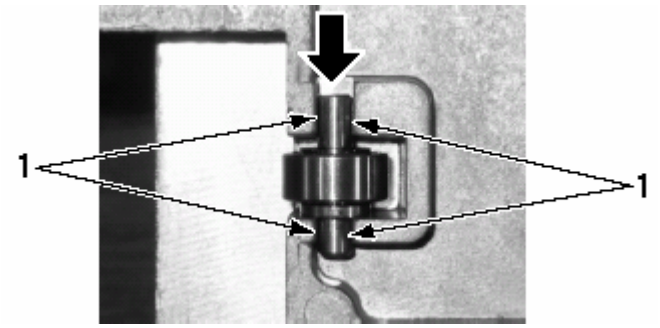



| | |
|---|---|
| 1 = E ring fixing the side cursor roller assembly | 2 = High-load bearing of the side cursor roller assembly |
| 3 = Brass spacer of the side cursor roller assembly | 4 = E ring of the cursor roller assembly |
| 5 = High-load bearing of the cursor roller assembly of downside | 6 = Brass spacer of the cursor roller assembly |

**Step 6 :** Apply the screw lock to the cursor axis, and install the cursor roller assembly with the axis at the lower position.

Notes :

- Be sure that the screw lock does not contaminate the cursor roller or the spacer.



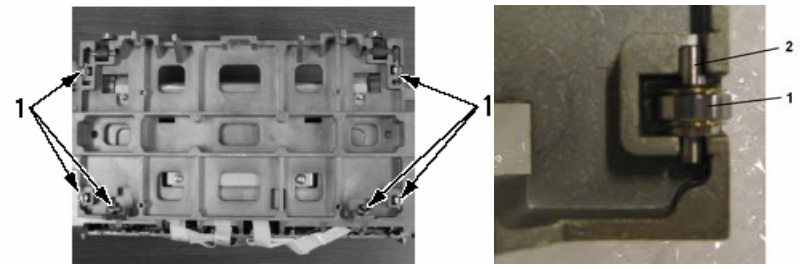

| |
|---|
| 1 = Applying position of the screw lock |

**Step 7 :** Perform head height adjustment according to "Head height adjustment".

## *4.7.8.2. B. Replacing the cursor roller assembly (6 high-load bearings) : open bearing type*

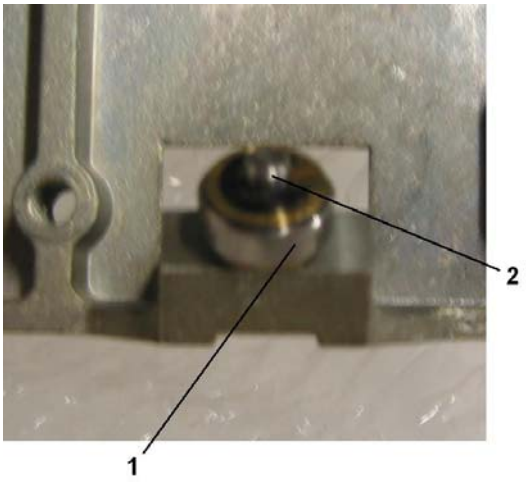
**Step 1 :** Follow the instructions in "Replacing the CR cursor assembly " to remove the CR cursor assembly.

**Step 2 :** Remove the side cursor roller assemblies and B cursor axises together with flat-head driver or another tool.




| | |
|---|---|
| 1 = CR cursor assembly (MY-43272) | 2 = B cursor axis |

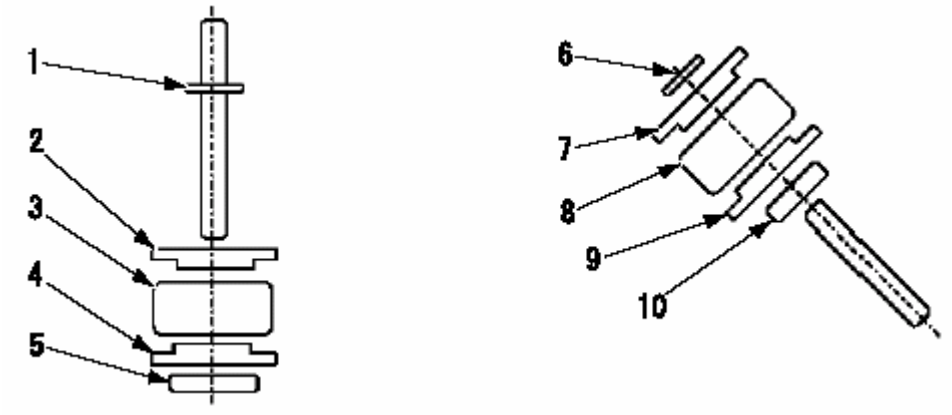
**Step 3 :** Remove the E ring fixing the cursor roller assembly (MY-43272) of downside.




| | |
|---|---|
| 1 = CR cursor assembly (MY-43272) | 2 = E ring fixing the cursor roller assembly. |

**Step 4 :** Replace the cursor roller assembly (MY-43272).

**Step 5 :** Install the spacers and the other parts as shown in the following figure.

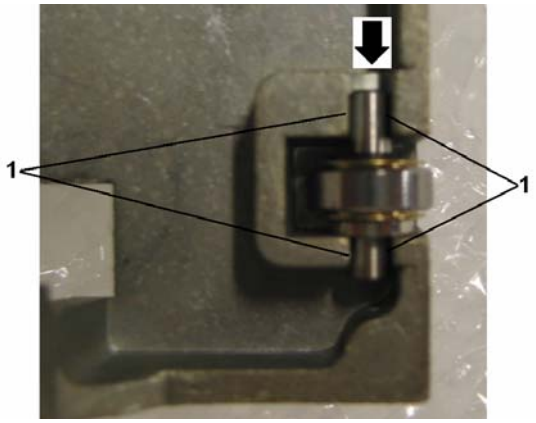



| | |
|---|---|
| 1 = E ring fixing the side cursor roller assembly | 2 = Spacer of the side cursor roller assembly |
| 3 = High-load bearing of the side cursor roller assembly | 4 = Spacer of the side cursor roller assembly |
| 5 = Brass spacer of the side cursor roller assembly | 6 = E ring of the cursor roller assembly |
| 7 = Spacer of the cursor roller assembly | 8 = High-load bearing of the cursor roller assembly of downside |
| 9 = Spacer of the cursor roller assembly | 10 = Brass spacer of the cursor roller assembly |

**Step 6 :** Apply the screw lock to the cursor axis, and install the cursor roller assembly with the axis at the lower position.

Notes :

- Be sure that the screw lock does not contaminate the cursor roller or the spacer.




1 = Applying position of the screw lock

**Step 7 :** Perform head height adjustment according to "Head height adjustment".

# 4.8. REPLACING THE MAINTENANCE AREA

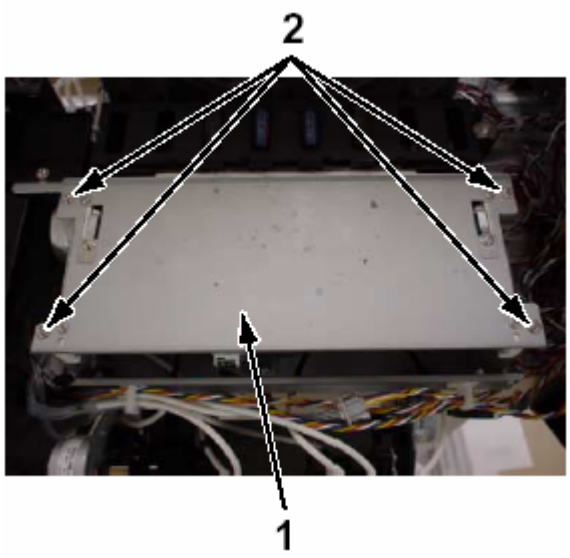
## *4.8.1. Replacing the maintenance assembly*

Notes :

- When replacing the parts inside the maintenance assembly, be sure to perform following operation to clear the counter.
  - "High ink initialization" or " Cleaning initialization": refer to "Counter Display Menu"
- Remove following covers before replacing the parts inside the maintenance assembly.
  - Side cover R: refer to "Removing side cover R"
  - Side cover L: refer to "Removing side cover L"
  - Front cover: refer to "Removing the front cover"
  - Carriage cover: refer to "Removing the carriage cover"
  - Y rail cover: refer to "Removing the Y rail cover"

**Step 1 :** Follow step 1 in "Replacing the flushing box assembly" to move the CR cursor to the left.

**Step 2 :** Remove the 4 screws fixing the side plate T.




| | |
|---|---|
| 1 = Side plate T | 2 = Screws (M3x6) fixing the side plate T |

**Step 3 :** Remove the side plate T.

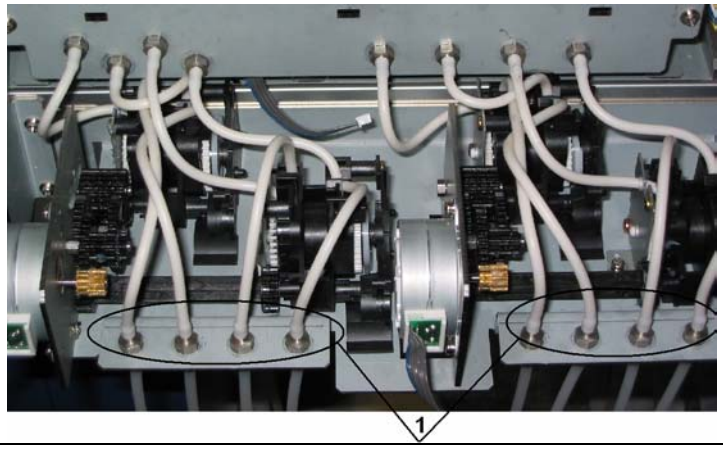
**Step 4 :** Remove the screw fixing the waste fluid receptacle.

**Step 5 :** Remove the waste fluid receptacle.

**Step 6 :** Remove the screw fixing the flushing box installation board.

**Step 7 :** Remove the flushing box installation board.

**Step 8 :** Remove the connector and tube from the maintenance assembly.

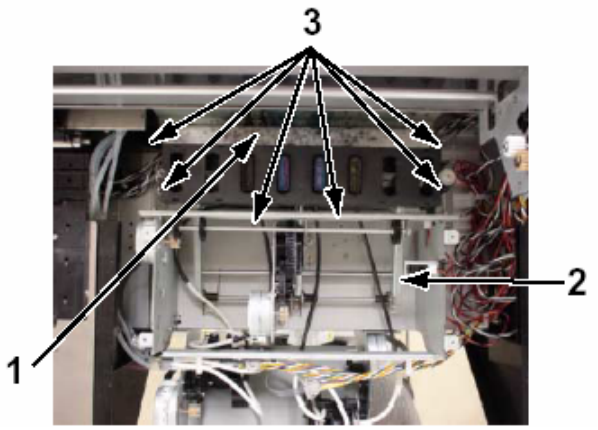



| |
|---|
| 1 = tube connections |

Notes :

- There is some remaining ink in the tubes. Be careful that the ink is not spilled from the tube onto the printer or items close to the printer.

**Step 9 :** Remove the 6 screws fixing the maintenance assembly.

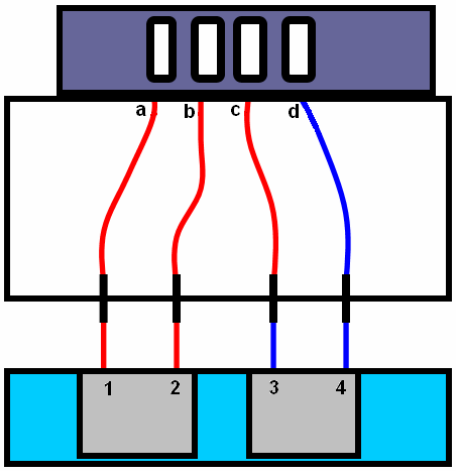
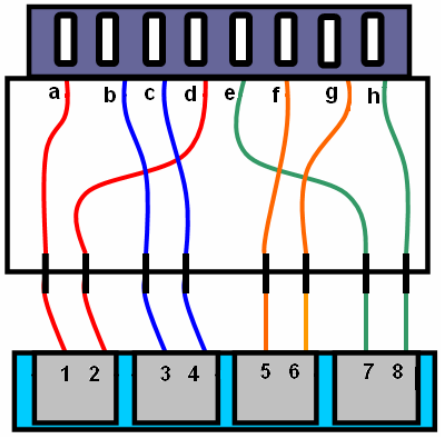
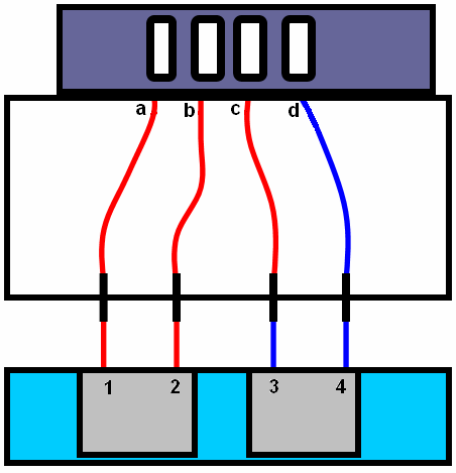
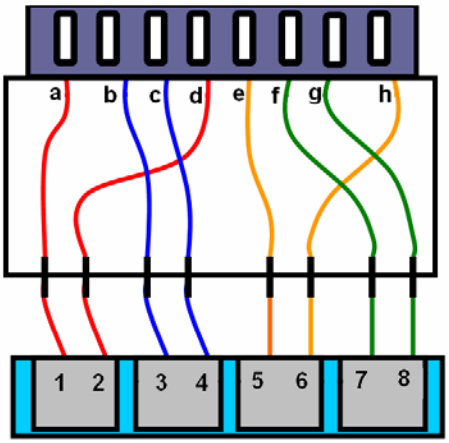



| | |
|---|---|
| 1 = Waste fluid receptacle | 2 = Maintenance assembly |
| 3 = Screws (M3x8) fixing the maintenance assembly | |

**Step 10 :** Replace the maintenance assembly.

Notes :

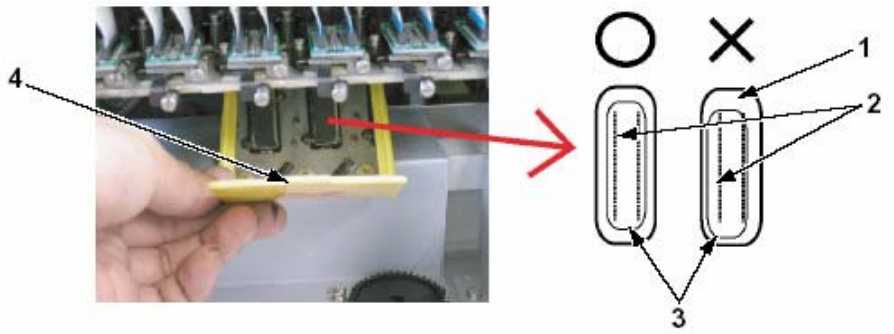
- Secure the maintenance assembly so that it abuts against the rear right portion.
- If the cap tube has not been cut, cut it to the length below, measured from the end of the tube: Numbers in brackets ( ) are the cap numbers from left to right as viewed from the front of the main body. For 50, 64 inch model: (1) 50mm, (2) 0mm, (3) 40mm, (4) 0mm For 87 inch model: (1) 90mm, (2) 50mm, (3) 40mm, (4) 70mm, (5) 0mm, (6) 30mm, (7) 30mm, (8) 0mm
- The connection sequence for the tubes is as follows: Numbers in brackets ( ) are the cap numbers from left to right as viewed from the front of the main body.
  - 50 or 64 inch model: Cap (a) and Pump (1), Cap (b) and Pump (3), Cap (c) and Pump (2), Cap (d) and Pump (4)
  - 87 inch model 2 heater: Cap (a) and Pump (1), Cap (b) and Pump (3), Cap (c) and Pump (4), Cap (d) and Pump (2), Cap (e) and Pump (7), Cap (f) and Pump (5), Cap (g) and Pump (6), Cap (h) and Pump (8)
  - 87 inch model 4 heater: Cap (a) and Pump (1), Cap (b) and Pump (3), Cap (c) and Pump (4), Cap (d) and Pump (2), Cap (e) and Pump (5), Cap (f) and Pump (7), Cap (g) and Pump (8), Cap (h) and Pump (6)

| 50” or 64” Falcon II Outdoor 2 heater | 87” Falcon II Outdoor 2 heater |
|---|---|
|   |   |
| **50” or 64” Falcon II Outdoor 4 heater** | **87” Falcon II Outdoor 4 heater** |
|   |   |

**Step 11 :** Move the cursor to the opposite side of the origin.

**Step 12 :** Cap once.

**Step 13 :** Use a mirror to check that the cap does not impinge on the nozzle.



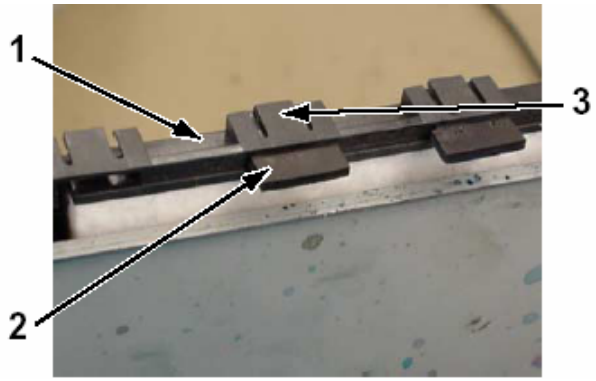

| | |
|---|---|
| 1 = Print head (nozzle face) | 2 = Nozzle |
| 3 = Cap trace | 4 = Mirror |

**Step 14 :** Reinstall all parts in the opposite order of the removal procedure.

## *4.8.2. Replacing the cleaner*

**Step 1 :** Follow step 1 to 3 in "Replacing the maintenance assembly" to remove the side plate T.

**Step 2 :** Lift up the hooks slightly and remove the cleaner from the wiper arm.




| | |
|---|---|
| 1 = Wiper arm | 2 = Cleaner |
| 3 = Hook | |

**Step 3 :** Replace the cleaner.

Notes :

- Do not touch the cleaner with your bare hands. Oil or grease adhering to the surface of the nozzles can cause the nozzles to fall out.
- When removing and installing the cleaner, be sure to remove the hook. Failure to do so could deform the cleaner.
- Install the cleaner to the following positions:
  - 50 or 64 inch model: The third, fourth, fifth, sixth from the left
  - 87 inch model: The first, third, fifth, seventh from the left
- Be sure to install the cleaner with the rubber part toward the rear.

**Step 4 :** Reinstall all parts in the opposite order of the removal procedure.

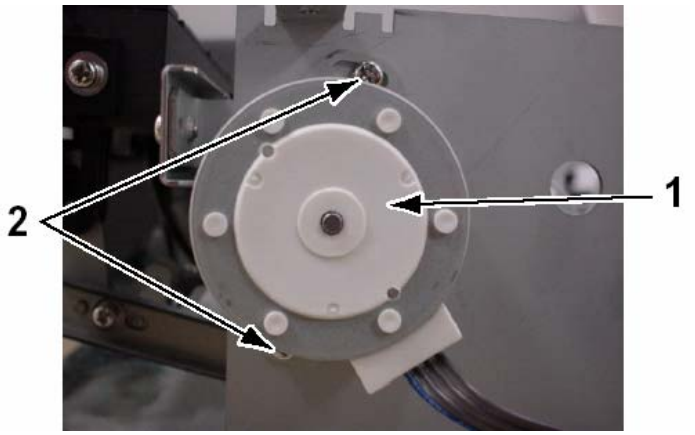
## *4.8.3. Replacing the SLIDE motor assembly (wiper arm)*

**Caution :**

The motor is hot after the product has been operated, so be careful not to burn yourself.

**Step 1 :** Follow the instructions in "Replacing the maintenance assembly" to remove the maintenance assembly.

**Step 2 :** Remove the 2 screws fixing the SLIDE motor assembly.



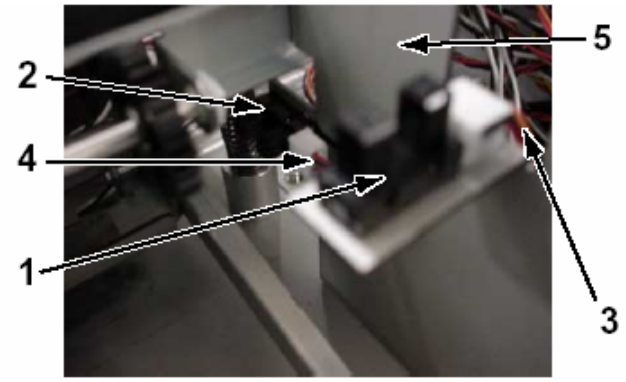

| | |
|---|---|
| 1 = SLIDE motor assembly | 2 = Screws (M3x6) fixing the SLIDE motor assembly |

**Step 3 :** Replace the SLIDE motor assembly.

**Step 4 :** Reinstall all parts in the opposite order of the removal procedure.

## *4.8.4. Replacing the transmission photosensor (wiper home position and maintenance home position)*

**Step 1 :** Remove the transmission photosensor from the side plate R.




| | |
|---|---|
| 1 = Transmission photosensor (wiper origin side) | 2 = Transmission photosensor (maintenance origin side) |
| 3 = Wiper origin cable assembly | 4 = Maintenance origin cable assembly |
| 5 = Side plate R | |

**Step 2 :** Remove each origin cable assembly from the transmission photosensor.

**Step 3 :** Remove the transmission photosensor.

**Step 4 :** Apply the screw lock to the tab portions of the transmission photosensors to be installed.

**Step 5 :** Reinstall all parts in the opposite order of the removal procedure.

Notes :

- When installing the origin cable assembly onto the transmission photosensor, be careful to not confuse the connectors.
  - Wiper origin cable assembly (black): front
  - Maintenance origin cable assembly (white): rear

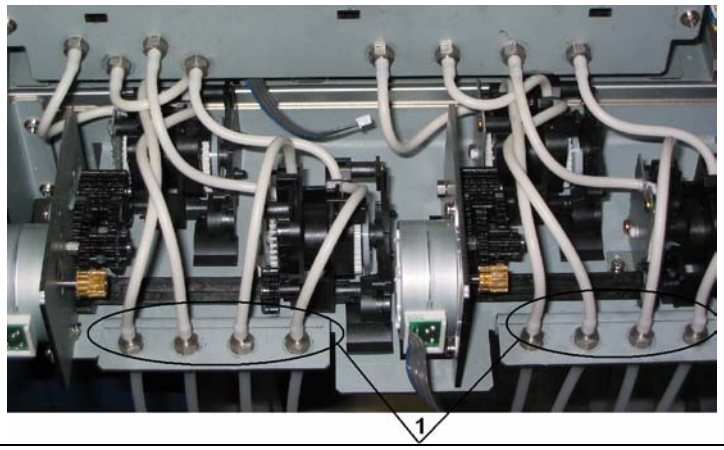
# 4.9. REPLACING THE PUMP AREA

## *4.9.1. Replacing the pump assembly*

Notes :

- Remove following covers before replacing the parts in the PF motor assembly.
  - Side cover R: refer to "Removing side cover R"
  - Side cover L: refer to "Removing side cover L"
  - Front cover: refer to "Removing the front cover"
  - Carriage cover: refer to "Removing the carriage cover"
  - Y rail cover: refer to "Removing the Y rail cover"
  - Maintenance cover: refer to "Removing the maintenance cover"

**Step 1 :** Remove the connector and tube from the pump assembly.

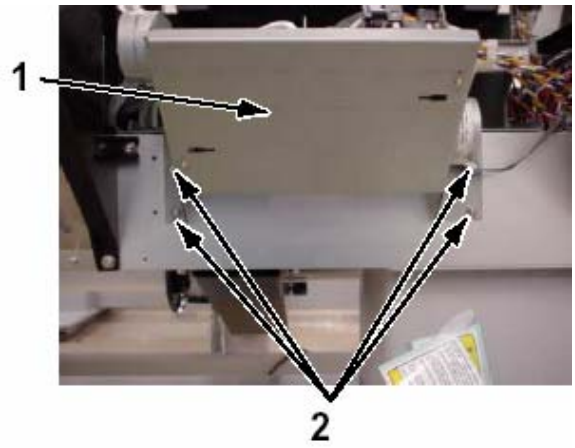
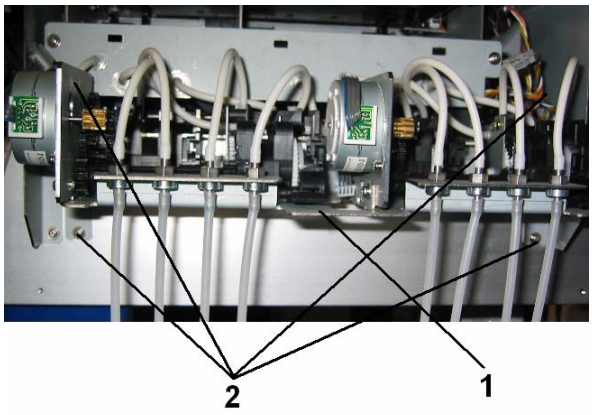



1 = tube connections

Notes :

- There is some remaining ink in the tubes. Be careful that the ink is not spilled from the tube onto the printer or items close to the printer.

**Step 2 :** Remove the 4 screws fixing the pump assembly.

| Falcon II Outdoor 2 heater | Falcon II Outdoor 2 heater |
|---|---|
|  |  |
| 1 = Pump assembly | 2 = Screws (M3x8) fixing the pump assembly |

**Step 3 :** Replace the pump assembly.

**Step 4 :** Reinstall all parts in the opposite order of the removal procedure.

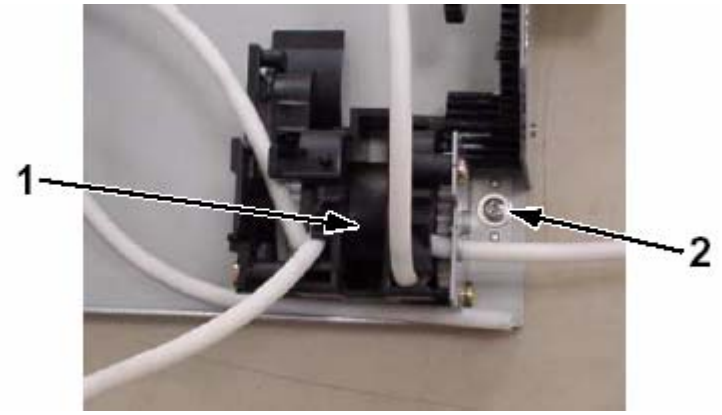
Notes :

- Follow the instructions in "Pump tubing layout for pump assembly" to connect the tube.

## *4.9.2. Replacing the pump assembly*

**Step 1 :** Follow the instructions in "Replacing the pump assembly " to remove the pump assembly.

**Step 2 :** Remove the screw fixing the pump assembly.




| | |
|---|---|
| 1 = Pump assembly | 2 = Screws (M3x6) fixing the pump assembly |

**Step 3 :** Replace the pump assembly.

**Step 4 :** Reinstall all parts in the opposite order of the removal procedure.

Notes :

- Follow the instructions in "Pump tubing layout for pump assembly" to connect the tube.

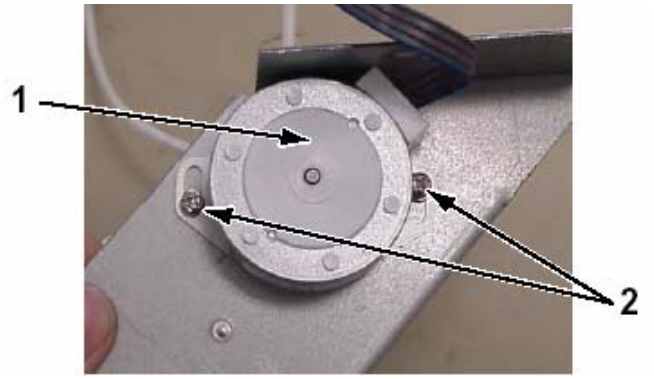
## *4.9.3. Replacing the pump motor assembly*

**Caution :**

The motor is hot after the product has been operated, so be careful not to burn yourself.

**Step 1 :** Follow the instructions in "Replacing the pump assembly " to remove the pump assembly.

**Step 2 :** Remove the 2 screws fixing the pump motor assembly.




| | |
|---|---|
| 1 = Pump motor assembly | 2 = Screws (M3x6) fixing the pump motor assembly |

**Step 3 :** Replace the pump motor assembly.

**Step 4 :** Reinstall all parts in the opposite order of the removal procedure.

# 4.10. REPLACING THE CARTRIDGE AREA

## *4.10.1. Replacing the I/H (ink holder) assembly*

There are 8 I/H assembly 's installed in this printer. Following procedure is for the removal of 1 I/H assembly.

Notes :

- Remove following covers before replacing the parts in the I/H assembly.
  - I/H cover: refer to "Removing the I/H cover"
  - Side cover R: refer to "Removing side cover R"
  - Panel unit assembly: refer to "Removing the panel unit assembly"

### *(1) Removing the I/H assembly*

**Step 1 :** Perform the ink discharge operation to discharge the ink from the inside of all ink paths.

Notes :

- For ink draining procedure, refer to "Head wash menu".

**Step 2 :** Remove the following connectors from the JUNCTION board assembly.

- Ink sensor assembly connectors (8)
- SC cable assembly connectors (8)

Notes :

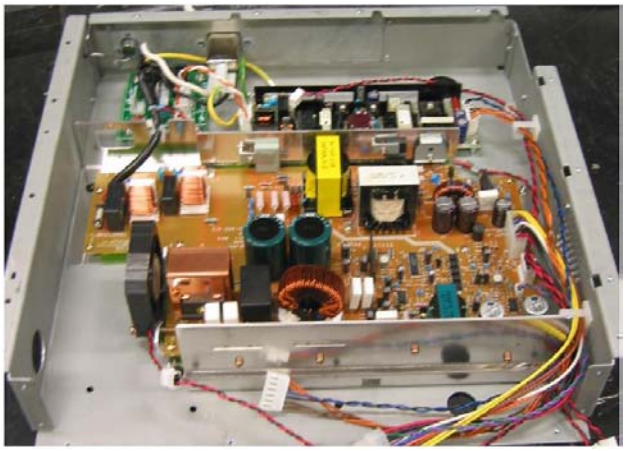
- For more details of the JUNCTION board assembly connector, refer to "Table Connectors connected to the JUNCTION board assembly" in "Replacing the JUNCTION board assembly".

**Step 3 :** Remove the sensor assembly harnesses removed in step 2 from their clamps.

**Step 4 :** Pull the harnesses out of the grommets on the board base fixing plate.

**Step 5 :** Follow the step 1 to 3 in "Replacing the power source board assembly" to remove the Mainboard base.

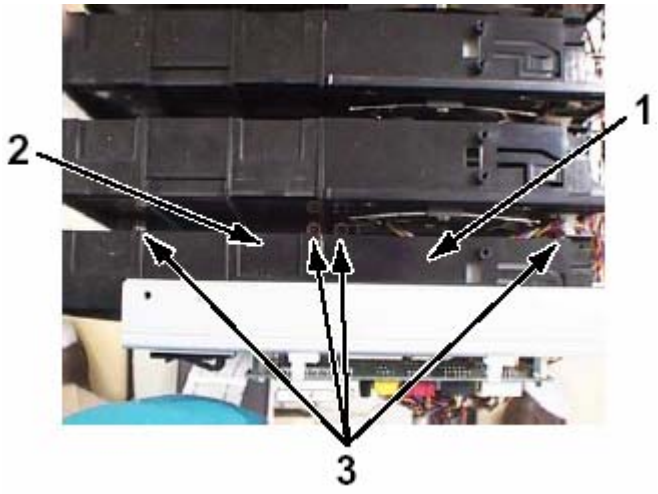
**Step 6 :** Remove the 3 screws fixing the P/S board installation board.



**Step 7 :** Remove the P/S board installation board.

**Step 8 :** Remove the coupling screws and O-ring from the I/H assembly.

**Step 9 :** Remove the 4 screws fixing I/C slide 2 and the I/H assembly.




| | |
|---|---|
| 1 = I/H assembly | 2 = I/C slide 2 |
| 3 = Screws (M3x8) fixing I/C slide 2 and the I/H assembly | |

**Step 10 :** Remove the I/H assembly.

**Step 11 :** Reinstall all parts in the opposite order of the removal procedure.

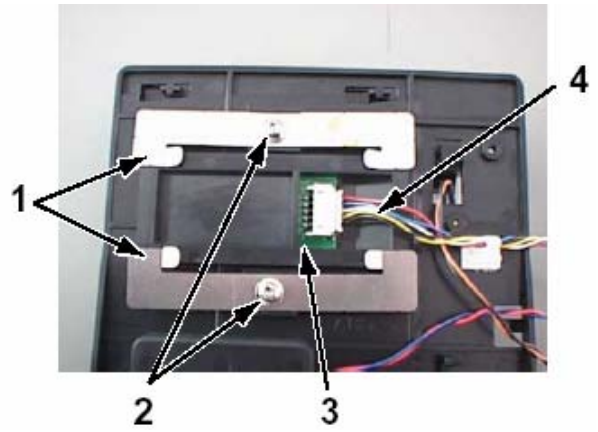
Notes :

- Please soak the O-ring in cleaning liquid before installation.

## *(2) Replacing the ink ID board assembly and the holder pressure spring*

**Step 1 :** Remove the I/H assembly.

**Step 2 :** Remove the 2 screws fixing the holder pressure spring.




| | |
|---|---|
| 1 = Holder pressure spring (two-ply use) | 2 = Screws (M3x6) fixing the holder pressure spring |
| 3 = Ink ID board assembly | 4 = SC cable assembly |

**Step 3 :** Replace the holder pressure spring.

**Step 4 :** Remove the SC cable assembly connector from the ink ID board assembly.

**Step 5 :** Replace the ink ID board assembly.

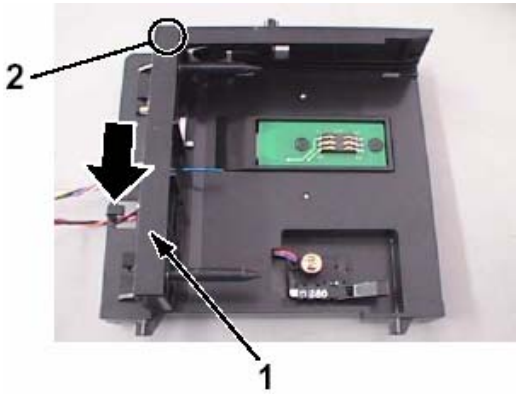
**Step 6 :** Reinstall all parts in the opposite order of the removal procedure.

## *(3) Replacing the cartridge frame assembly*

**Step 1 :** Remove the I/H assembly.

**Step 2 :** Remove the cables from the I/H assembly clamp.

**Step 3 :** Disengage the hook fixing the cartridge frame assembly, and then slide the cartridge frame assembly in the direction of the arrow to remove it.




| | |
|---|---|
| 1 = Cartridge frame assembly | 2 = Hook |

**Step 4 :** Slide the cartridge frame assembly in the direction of the arrow to remove it.

**Step 5 :** Replace the cartridge frame assembly.

**Step 6 :** Reinstall all parts in the opposite order of the removal procedure.

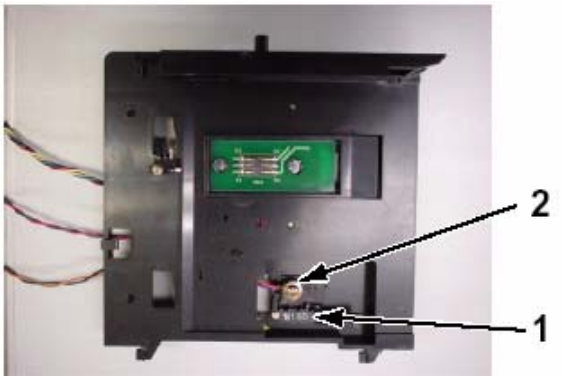
### *(4) Replacing the ink sensor assembly (ink NOT sensor, ink END sensor)*

**Step 1 :** Remove the I/H assembly.

**Step 2 :** Remove the cables from the I/H assembly clamp.

**Step 3 :** Remove the cartridge frame assembly.

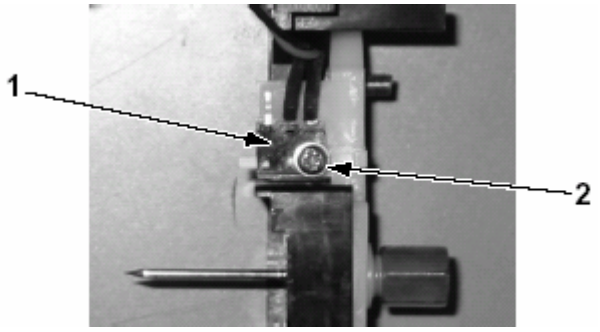
**Step 4 :** Remove the screw fixing the ink END sensor.




| | |
|---|---|
| 1 = Ink END sensor | 2 = Screw (M3x10) fixing the ink END sensor |

**Step 5 :** Remove the ink END sensor.

**Step 6 :** Remove the screw fixing the Ink NOT sensor to the Cartridge frame assembly.




| | |
|---|---|
| 1 = Ink NOT sensor | 2 = Screw (M2x8) fixing the ink NOT sensor |

**Step 7 :** Remove the ink NOT sensor.

**Step 8 :** Replace the ink sensor assembly.

**Step 9 :** Reinstall all parts in the opposite order of the removal procedure.

Notes :

- When installing the ink NOT sensor, do not tighten the screw tightly. Otherwise, the switch may not come out.

**Step 10 :** Make sure that the Ink NOT sensor switch moves.

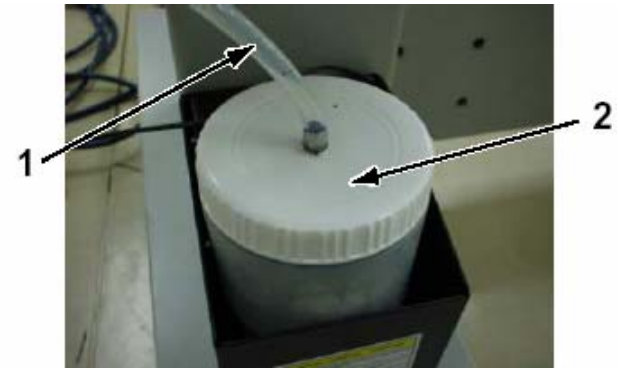
# 4.11. REPLACING SUPPORTS AND SCROLLER

## *4.11.1. Replacing the waste fluid bottle assembly (Falcon II Outdoor 2H)*

Notes :

- When replacing the waste fluid bottle assembly, be sure to perform following operation to clear the counter. "High ink initialization" or " Cleaning initialization": refer to "Counter Initialization Menu"

**Step 1 :** Remove the waste fluid tube from the waste fluid bottle assembly.




| | |
|---|---|
| 1 = Waste fluid tube | 2 = Waste fluid bottle assembly |

**Step 2 :** Replace the waste fluid bottle assembly.

**Caution :**

Waste ink will remain inside the tubes. Be careful that the ink is not spilled from the tube onto the printer or items close to the printer.

**Step 3 :** Reinstall all parts in the opposite order of the removal procedure.

## *4.11.2. Replacing the waste fluid bottle assembly (Falcon II Outdoor 4H)*

Notes :

- When replacing the waste fluid bottle assembly, be sure to perform following operation to clear the counter. "High ink initialization" or " Cleaning initialization": refer to "Counter Initialization Menu"

**Step 1 :** Remove the waste fluid bottle assembly.

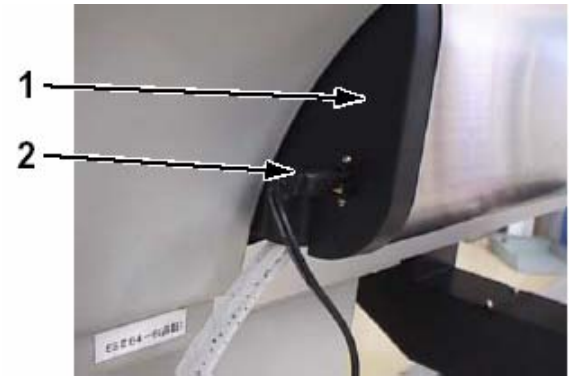
**Caution :**

Waste ink will remain inside the tubes. Be careful that the ink is not spilled from the tube onto the printer or items close to the printer.

## *4.11.3. Replacing the waste bottle box sensor assembly (F2O 2H)*

**Step 1 :** Follow the instructions in "Replacing the waste fluid bottle assembly" to remove the waste fluid bottle assembly.

**Step 2 :** Remove the waste liquid BOX sensor assembly connector from the rear side cap R.



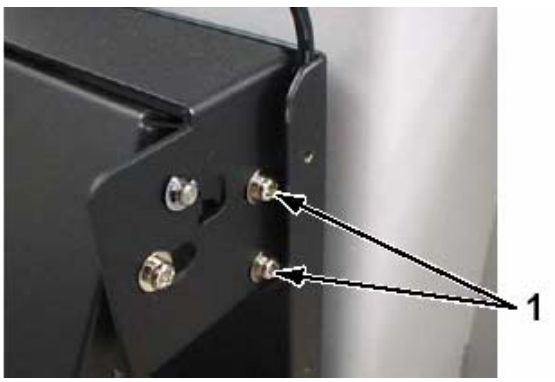

| | |
|---|---|
| 1 = Rear side cap R | 2 = Waste liquid BOX sensor assembly connector |

**Step 3 :** Remove the screws (3 at the front and 12 at the right and left) fixing the waste liquid bottle cover.

| | |
|---|---|
| 1 = Waste liquid bottle cover | 2 = Screws (M3x6) |

**Step 4 :** Remove the waste liquid bottle cover.

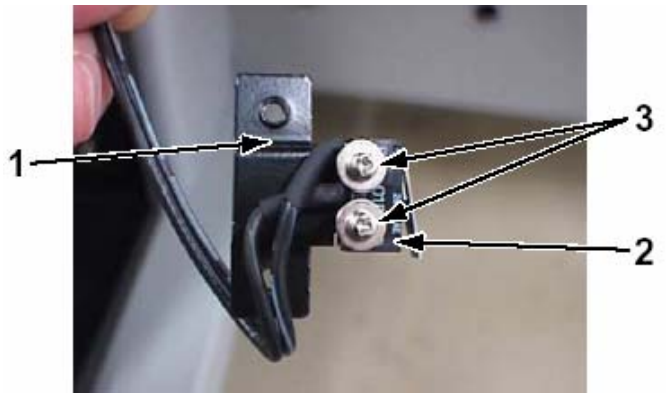
**Step 5 :** Remove the screws (2) fixing the waste liquid sensor installation board.




| |
|---|
| 1 = Screws fixing the waste liquid sensor installation board (M3x6) |

**Step 6 :** Remove the waste liquid sensor installation board.

**Step 7 :** Remove the screws (M2x8) fixing the waste liquid BOX sensor assembly.




| | |
|---|---|
| 1 = Waste liquid sensor installation board | 2 = Waste liquid BOX sensor assembly |
| 3 = Screws (M2x8) | |

**Step 8 :** Remove the waste liquid BOX sensor assembly.

**Step 9 :** Reinstall all parts in the opposite order of the removal procedure.

Notes :

- When installing the waste liquid BOX sensor assembly, pay attention to following points :
  - Adjust the waste liquid BOX sensor assembly before installing the waste liquid bottle cover.
  - Position and install it so that "Sensor : Waste liquid tank" is properly switched in "Sensor Menu".

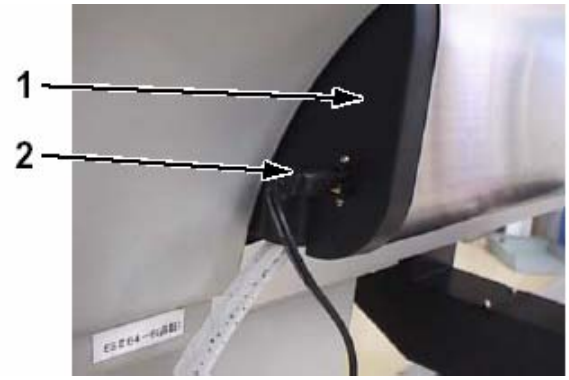
## *4.11.4. Replacing the waste bottle box sensor assembly (F2O 4H)*

**Step 1 :** Follow the instructions in "Replacing the waste fluid bottle assembly" to remove the waste fluid bottle assembly.

**Caution :**

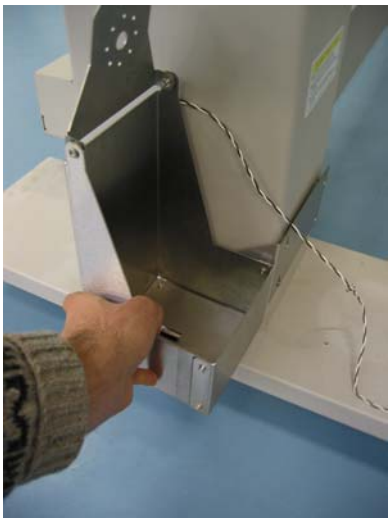
Waste ink will remain inside the tubes. Be careful that the ink is not spilled from the tube onto the printer or items close to the printer.

**Step 2 :** Remove the waste liquid BOX sensor assembly connector from the rear side cap R.




| | |
|---|---|
| 1 = Rear side cap R | 2 = Waste liquid BOX sensor assembly connector |

**Step 3 :** Remove the waste liquid box assy from the stand.



**Step 4 :** Remove the screws fixing the waste liquid sensor assembly.

**Step 5 :** Reinstall all parts in the opposite order of the removal procedure.

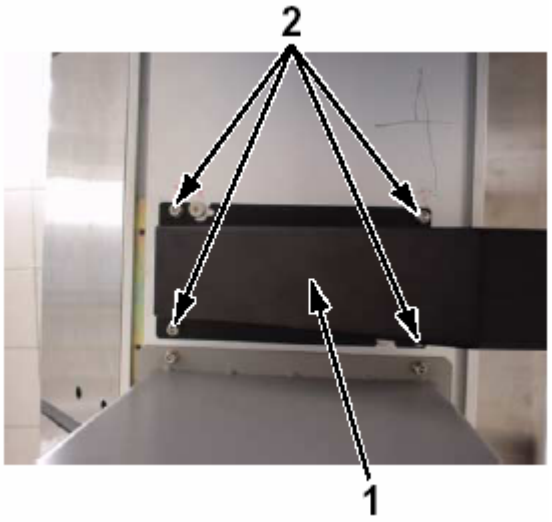
Notes :

- When installing the waste liquid BOX sensor assembly, pay attention to following points :
  - Adjust the waste liquid BOX sensor assembly before installing the waste liquid bottle cover.
  - Position and install it so that "Sensor : Waste liquid tank" is properly switched in "Sensor Menu".

## *4.11.5. Replacing the scroller R assembly*

### *(1) Replacing the scroller R assembly*

**Step 1 :** Remove the 4 hexagon socket head springs fixing the scroller R assembly.



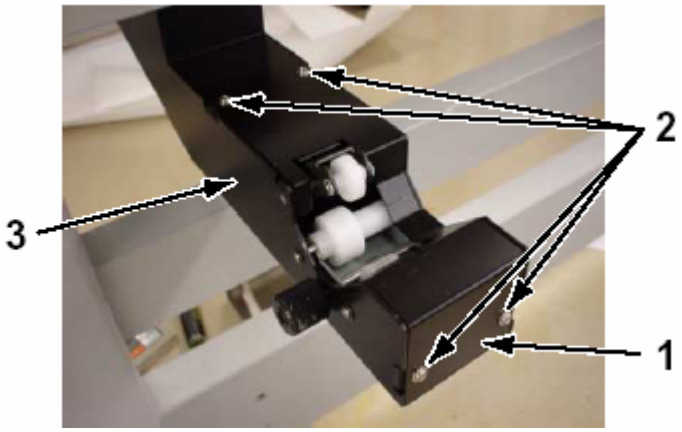

| | |
|---|---|
| 1 = Scroller R assembly | 2 = Hexagon socket head springs |

**Step 2 :** Replace the scroller R assembly.

**Step 3 :** Reinstall all parts in the opposite order of the removal procedure.

### *(2) Replacing the pressure roller, roller 1, and roller 2*

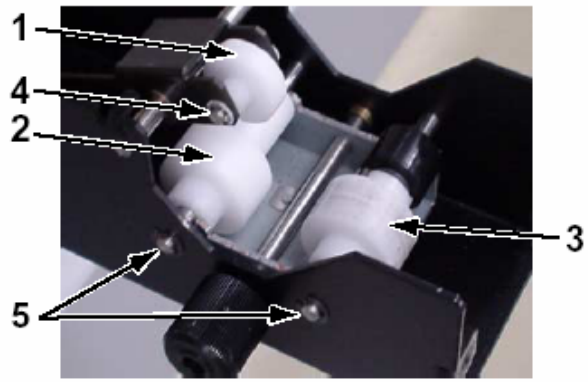
**Step 1 :** Remove the 4 screws fixing scroller receptacle cover R.




| | |
|---|---|
| 1 = Scroller receptacle cover R | 2 = Screws (M3x8) fixing scroller receptacle cover R |
| 3 = Scroller R assembly | |

**Step 2 :** Remove the scroller receptacle cover R.

**Step 3 :** Remove the E ring fixing the axes of the rollers to be replaced.




| | |
|---|---|
| 1 = Pressure roller | 2 = Roller 1 |
| 3 = Roller 2 | 4 = E ring (E-3) |
| 5 = E ring (E-4) | |

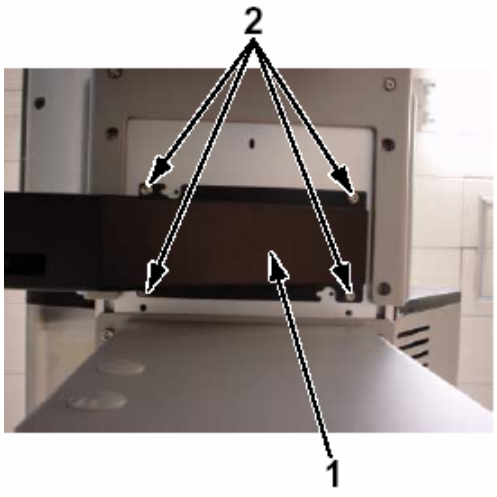
**Step 4 :** Replace the rollers.

**Step 5 :** Reinstall all parts in the opposite order of the removal procedure.

## *4.10.6. Replacing the scroller L assembly*

### *(1) Replacing the scroller L assembly*

**Step 1 :** Remove the 4 hexagon socket head springs fixing the scroller L assembly.



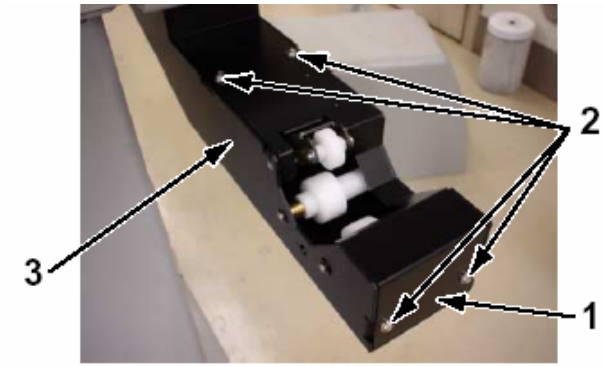

| | |
|---|---|
| 1 = Scroller L assembly | 2 = Hexagon socket head springs |

**Step 2 :** Replace the scroller L assembly.

**Step 3 :** Reinstall all parts in the opposite order of the removal procedure.

### *(2) Replacing the pressure roller and roller 1*

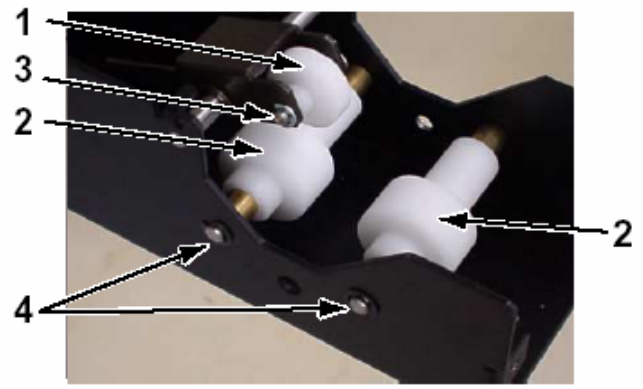
**Step 1 :** Remove the 4 screws fixing scroller receptacle cover R.




| | |
|---|---|
| 1 = Scroller receptacle cover R | 2 = Screws (M3x8) fixing scroller receptacle cover R |
| 3 = Scroller L assembly | |

**Step 2 :** Remove scroller receptacle cover R.

**Step 3 :** Remove the E ring fixing the axes of the rollers to be replaced.




| | |
|---|---|
| 1 = Pressure roller | 2 = Roller 1 |
| 3 = E ring (E-3) | 4 = E ring (E-4) |

**Step 4 :** Replace the rollers.

**Step 5 :** Reinstall all parts in the opposite order of the removal procedure.

# 5. SELF-DIAGNOSIS FUNCTION

## 5.1. INTRODUCTION

This chapter provides information on the self-diagnosis function.
The self-diagnosis function adjusts the printing accuracy. It is used in the manufacturing process, adjustment and maintenance.
The self-diagnosis function is implemented in the system firmware. All functions are available from the operation panel.

Notes :

- Refer to “Part names and functions ".

## 5.2. PREPARATION

Before you can use the self-diagnosis function, you should make the machine ready and display the self-diagnosis menu.

### *5.2.1. Preparations on Machine*

Before starting up the self-diagnosis function, perform following preparations:

#### *(1) Setting printing media*

Set a roll media for adjustment.

Notes :

- In the self-diagnostic mode, pressing the [ENTER] key in the Diagnosis menu moves the lever up and down.
- In the self-diagnostic mode, pressing the [CANCEL] key in the Diagnosis menu cuts the media.
- When the self-diagnosis menu has been displayed, roll media is automatically set as the type of media.
- Make sure to use double vinyl media for the adjustment purpose.

### *(2) Connecting power cable*

Connect the power cable to the machine's inlet assembly and insert the power plug into an outlet.

Notes :

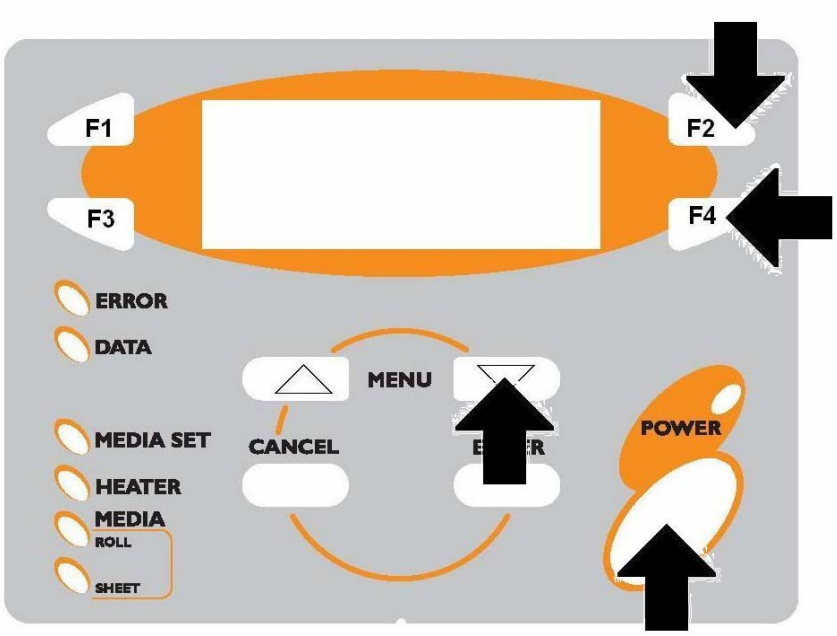
- Do not connect three or more power plugs to one outlet.

## *5.2.2. Starting Up*

To use the self-diagnosis function, you should first display the self-diagnosis menu on the operation panel.
The self-diagnosis menu is completely independent of the normal operation mode and self-diagnosis display mode. To call up the self-diagnosis menu, follow the steps below.

**Step 1 :** If the system is in the operation mode or the self-diagnosis menu mode, press the [POWER] key to power off the unit.
- The power is turned off.

**Step 2 :** Press and hold the [F2] key, [F4] key, and [MENU ↓] key simultaneously. While holding down these keys, press the [POWER] key.
- The system will enter the self-diagnosis mode and display the self-diagnosis menu.



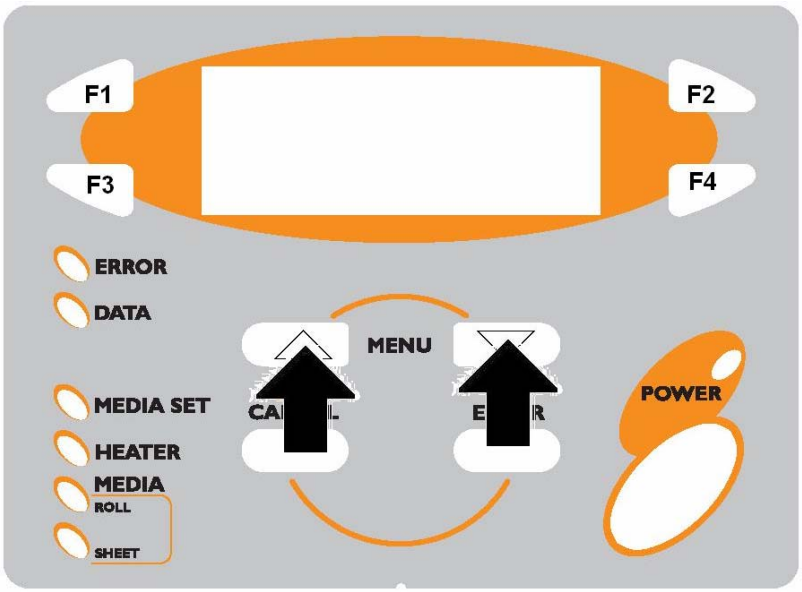
# 5.3. OPERATIONS IN SELF-DIAGNOSIS MODE

This section explains how to operate in the self-diagnosis mode and provides the list of available diagnosis items.

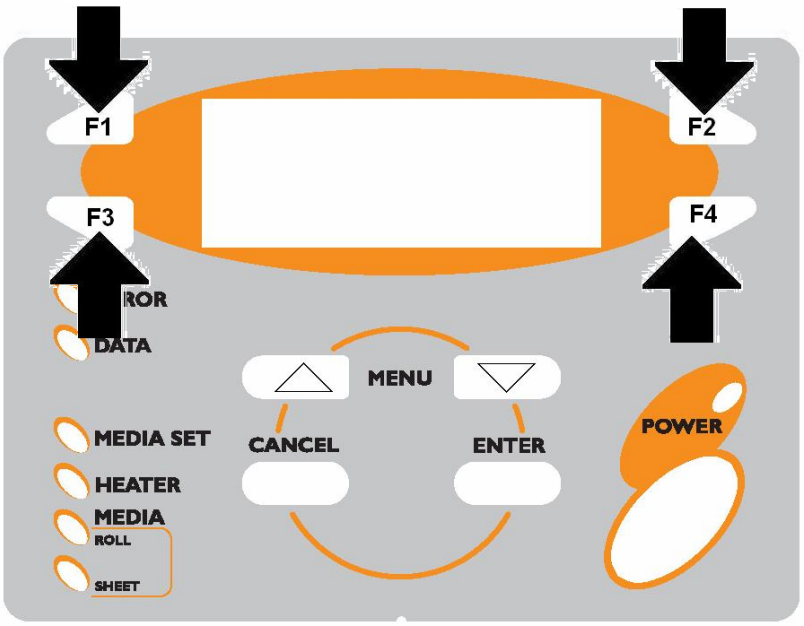
## *5.3.1. Operating Self-Diagnosis Mode*

Follow the operation flow shown below to operate the self-diagnosis mode.
For more detailed operation steps, refer to the flow chart of the applicable diagnosis item.

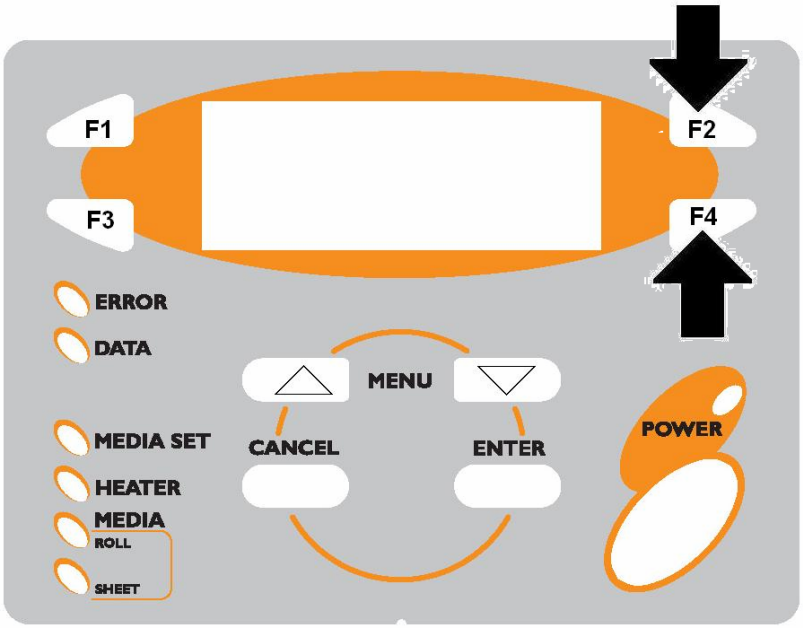
**Step 1 :** Press the [MENU ↑] key or the [MENU ↓] key on the operation panel to change over the diagnosis menu.




**Step 2 :** Press the [F1] key, [F2] key, [F3] key or [F4] key to select the applicable diagnosis item.

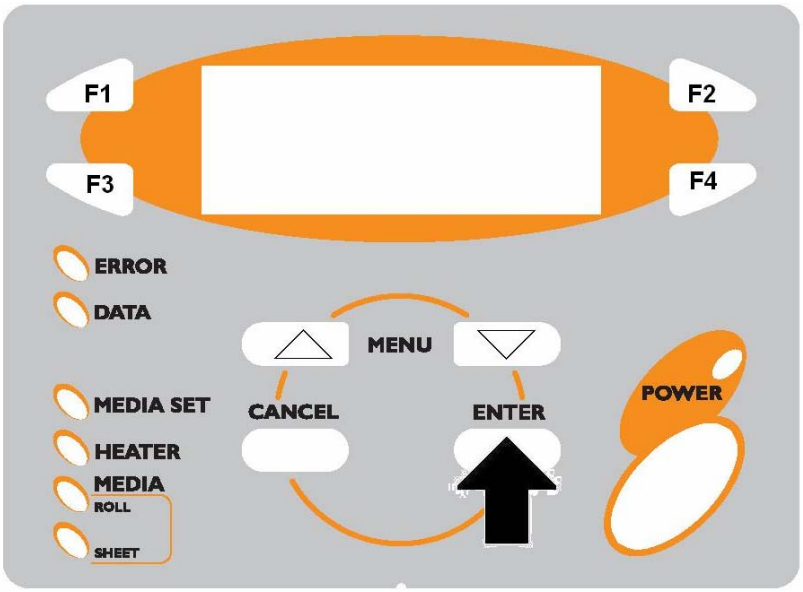


**Step 3 :** Press the [F2] key or the [F4] key on the operation panel to modify the set value.




**Step 4 :** To save the modified value, press the [ENTER] key on the operation panel.

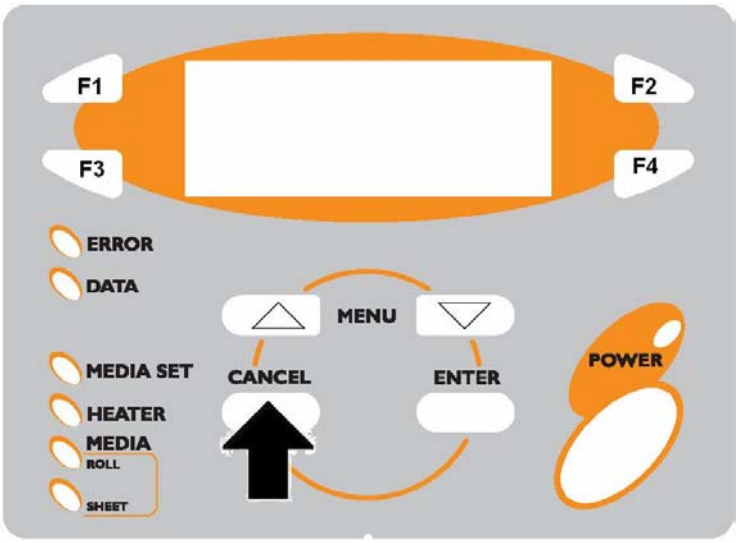
- The modified set value is stored and a next item is displayed.



Notes :

- If you press the [CANCEL] key instead of the [ENTER] key, the modification will not be stored.

**Step 5 :** To quit the diagnosis menu, press the [CANCEL] key on the operation panel.
- The system returns to an upper hierarchy of the diagnosis menu.

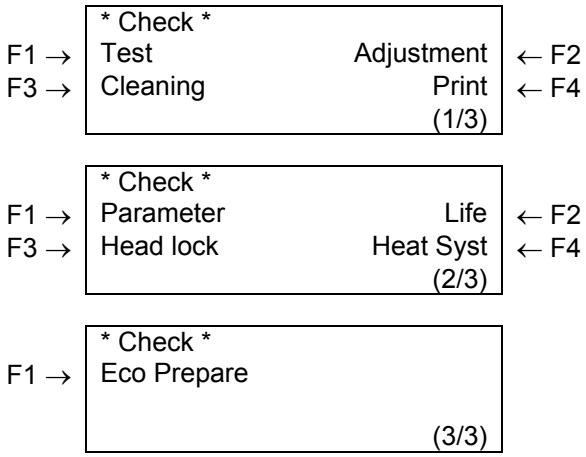



**Step 6 :** To exit the self-diagnosis menu, press the [POWER] key.

## *5.3.2. Diagnosis Items in Self-Diagnosis Menu*

The Self-Diagnosis menu includes following diagnosis items.

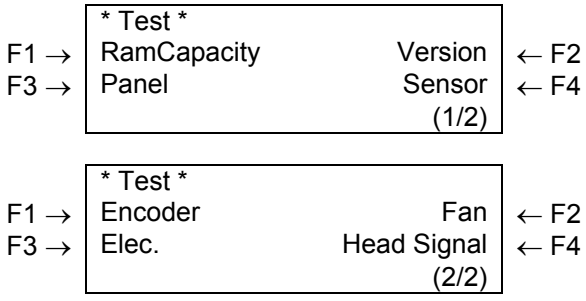
| Initialization item | Description | Reference |
|---|---|---|
| Inspection Menu | Performs various inspections on the circuit boards, sensors, and fans. | Refer to Inspection Menu |
| Adjustment Menu | Performs various adjustments for the printer mechanism. | Refer to Adjustment Menu |
| Purge Menu | Performs mode-specified purge. | Refer to Purge Menu |
| Sample Printing Menu | Performs sample printing necessary for adjustment. | Sample Printing Menu |
| Parameter Menu | Configures various adjustment parameters. | Refer to Parameter Menu |
| Endurance Running Menu | Performs endurance running of the printer mechanism. | Refer to Endurance Running Menu |
| Head Lock Menu | Performs lock and release of the print head. | Refer to Head Lock Menu |



# 5.4. TEST / INSPECTION MENU

In the Inspection menu, you can perform various inspections on the circuit boards, sensors and fans.
The Inspection menu includes the following diagnosis items.

| Initialization item | Description | Refer to |
|---|---|---|
| Memory size | This menu displays the memory size. | → Memory Size Menu |
| Version | Displays the versions of the firmware and mainboard assembly.<br>➢ Firmware version<br>➢ Backup parameter version<br>➢ Setting of dip switches<br>➢ Revision of mainboard assembly | → Version Menu |
| Operation panel | Used to check the functions of the operation panel keys, LCD, and LED. | → Operation Panel Menu |
| Sensor | This menu displays the sensor status in the operation panel.<br>➢ CR_HP sensor<br>➢ Cover sensor<br>➢ Lever sensor<br>➢ P_EDGE sensor<br>➢ P_REAR sensor<br>➢ HD_SLIDE sensor<br>➢ Thermistor sensor<br>➢ Ink ID sensor<br>➢ Ink NOT sensor<br>➢ Ink END sensor | → Sensor Menu |
| Encoder | Displays the detected values from the following encoders.<br>➢ CR (Carriage)<br>➢ PF (Media feed) | → Encoder Menu |
| Fan | This menu is used to check if the fan operates normally by turning ON and OFF the fan. | → Fan Menu |
| History | Used to check the following records.<br>➢ Maintenance history<br>➢ Serious error history | → History Menu |
| Head waveform | This menu is used to check the head-driving signal. | → Head Signal Menu |



## *5.4.1. Memory Size Menu*

This menu displays the memory size.

| * RamCapacity * | |
|---|---|
| RamCapacity | 128 MB |

Notes :

- The Memory Size menu displays the size of the memory installed on the mainboard (128 MB or 256 MB).

## *5.4.2. Version Menu*

This menu displays following contents about the firmware and mainboard assembly.

- Firmware version
- Backup parameter version
- Setting of dip switches of mainboard assembly
- Revision of mainboard assembly

Notes :

- The details of the dipswitch setting of mainboard assembly are as follows.
  - Switch 1: OFF
  - Switch 2: OFF

| * Ver * | |
|---|---|
| Firm | rh 2.04, mA |
| Parameter | 1.00 |
| | (1/2) |

| * Ver * | |
|---|---|
| DipSW | 0x03 |
| Board Rev | 00 |
| | (2/2) |

## *5.4.3. Operation Panel Menu*

This menu is used to check the functions of the operation panel keys, LCD, and LEDs.

### *(1) Operation panel key check*

When you press a key on the operation panel, the name of the key is displayed on the LCD. To exit the operation panel key check, press the [CANCEL] key.

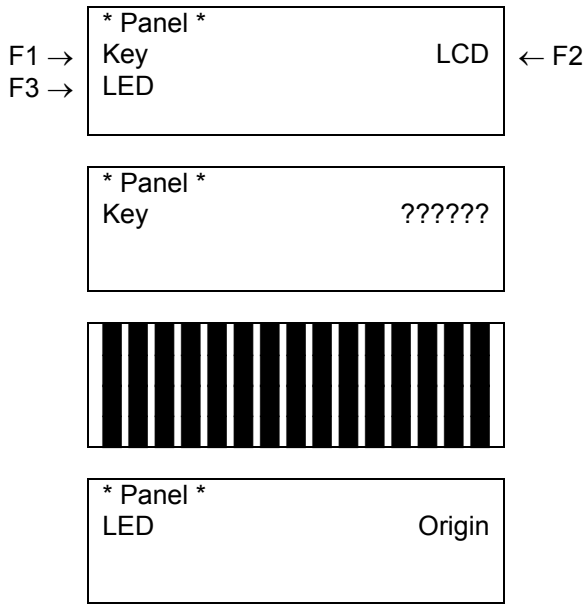
### *(2) LCD check*

The entire LCD screen is filled in black. You can check for any missing dots.

### *(3) LED check*

The following LEDs light up in order. The LCD displays the name of the LED that is currently illuminated.

- Power lamp
- Error lamp
- Data lamp
- Media set lamp
- Roll media lamp
- Cut media lamp
- Heater lamp



Notes :

- The ability to check the heater lamp is not available onto older firmware.

## *5.4.4. Sensor Menu*

This menu displays the sensor status in the operation panel.
If the displayed sensor status does not match the actual machine status, replace or adjust the relevant sensor referring to "Table Inspection Items in Sensor Menu".

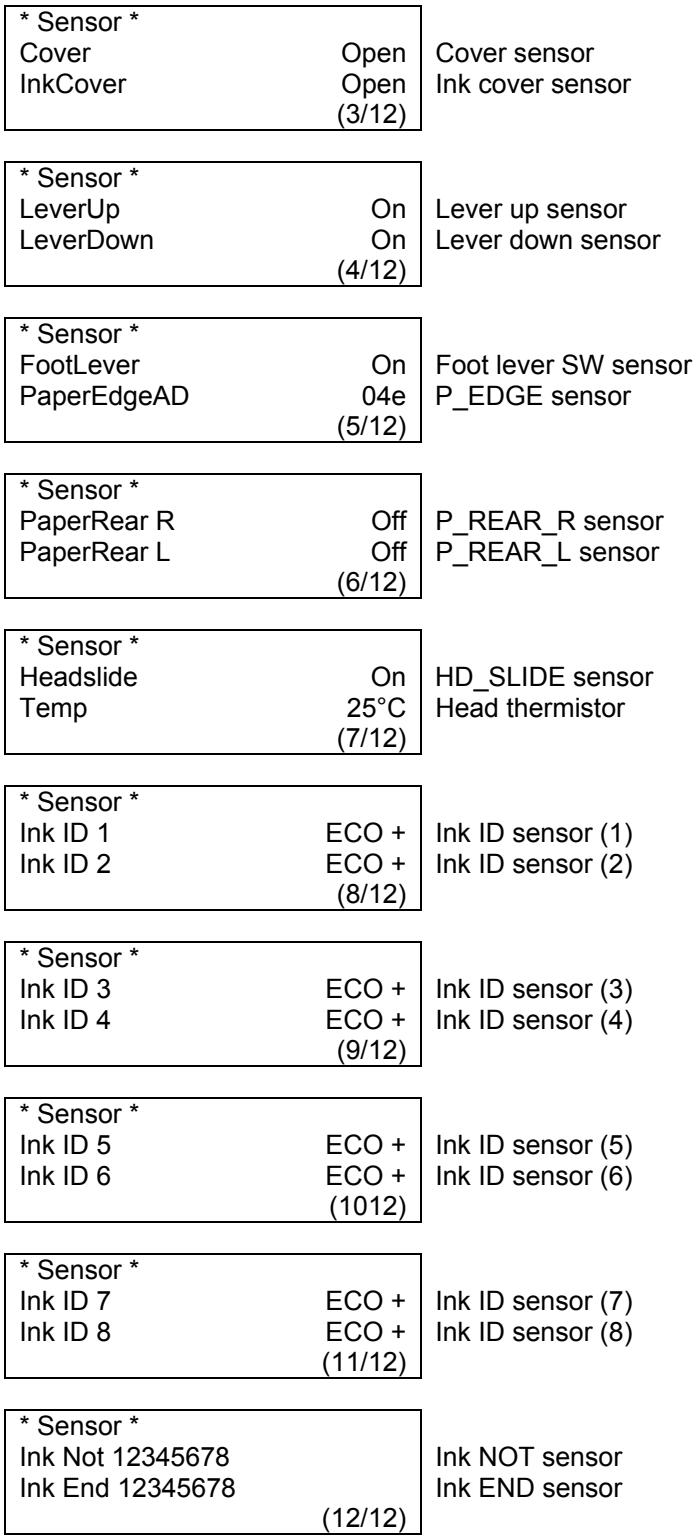
| N° | Sensor name | Status in display | Refer to |
|---|---|---|---|
| | CR_HP sensor | ON/OFF | Replacing the transmission photosensor |
| | Waste fluid sensor | ON/OFF | Replacing the waste liquid BOX sensor assembly |
| | Cover sensor | Open/Close | Replace the cover R sensor assembly and the cover L sensor assembly |
| | Ink cover sensor | Open/Close | Removing the I/H cover |
| | Lever Up | ON/OFF | Replacing the transmission photosensor |
| | Lever Down | ON/OFF | Replacing the transmission photosensor |
| | Foot lever SW sensor | ON/OFF | |
| | P_EDDE sensor | 0 to FF (0 to 255) | Replacing the P_EDGE sensor assembly |
| | P_REAR-R sensor | ON/OFF | Replacing the P_REAR_R sensor assembly and P_REAR_L sensor assembly |
| | P_REAR-L sensor | ON/OFF | Replacing the P_REAR_R sensor assembly and P_REAR_L sensor assembly |
| | HD_SLIDE sensor | ON/OFF | Replacing the SLIDE motor assembly, HD_SLIDE sensor assembly and slide motor installation board |
| | Head thermistor | **°C | |
| | Ink ID sensor (1,2,3,4,5,6,7,8) | Pig, Dye, WASH | Replacing the Cartridge Area |
| | Ink NOT sensor | 12345678 | Replacing the Cartridge Area |
| | Ink END sensor | 12345678 | Replacing the Cartridge Area |

Notes :

- The ink ID sensor indicates the type of ink cartridge installed with the following ID.
  - WASH: Cleaning fluid
  - Pig: Pigment system ink
  - Dye: Dye system ink
- The ink NOT sensor indicates the number where a cartridge is missing.
- For the ink end sensor, the colour of the ink that has run out is displayed.

| | | |
|---|---|---|
| * Sensor * | | |
| CR Origin | Off | CR_HP sensor |
| Waste Bin | On | Waste fluid sensor |
| | (1/12) | |

| | | |
|---|---|---|
| * Sensor * | | |
| Wiper | On | Wiper sensor |
| Cap | Off | Cap sensor |
| | (2/12) | |


* Sensor *
Cover Open
InkCover Open
(3/12)
Cover sensor
Ink cover sensor
* Sensor *
LeverUp On
LeverDown On
(4/12)
Lever up sensor
Lever down sensor
* Sensor *
FootLever On
PaperEdgeAD 04e
(5/12)
Foot lever SW sensor
P_EDGE sensor
* Sensor *
PaperRear R Off
PaperRear L Off
(6/12)
P_REAR_R sensor
P_REAR_L sensor
* Sensor *
Headslide On
Temp 25°C
(7/12)
HD_SLIDE sensor
Head thermistor
* Sensor *
Ink ID 1 ECO +
Ink ID 2 ECO +
(8/12)
Ink ID sensor (1)
Ink ID sensor (2)
* Sensor *
Ink ID 3 ECO +
Ink ID 4 ECO +
(9/12)
Ink ID sensor (3)
Ink ID sensor (4)
* Sensor *
Ink ID 5 ECO +
Ink ID 6 ECO +
(1012)
Ink ID sensor (5)
Ink ID sensor (6)
* Sensor *
Ink ID 7 ECO +
Ink ID 8 ECO +
(11/12)
Ink ID sensor (7)
Ink ID sensor (8)
* Sensor *
Ink Not 12345678
Ink End 12345678
(12/12)
Ink NOT sensor
Ink END sensor

## *5.4.5. Encoder Menu*

This menu displays the detected values from the following encoders.

- CR_ENC (Carriage)
- PF_ENC (Media feed)

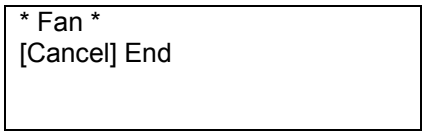
Notes :

- For the encoder-detected values, the encoder pulse numbers are displayed in hexadecimal number.

| | | |
|---|---|---|
| * Encoder * | | |
| CR | 0000 | CR_ENC |
| PF | 0000 | PF_ENC |

## *5.4.6. Fan Menu*

This menu is used to check if the fan operates normally by turning it ON and OFF the fan.
As soon as you select this menu, the fan will be activated.
When you press the [CANCEL] key, the fan is off and the operation panel displays "Inspection: Fan".



## *5.4.7. History Menu*

This menu is used to check the maintenance history and serious error history.

F1 → | * Elec. * / Maintenance Error | ← F2

### *(1) Maintenance history*

Maintenance history for the following parts is displayed.

- Waste liquid tank capacity (#)
- Number of cuts (#)
- Number of wipes of the cleaner head (#)
- Number of rubs of the cleaner head (#)
- Number of drives of the CR motor (#)
- Number of drives of the PF motor (#)
- Number of printing copies (#)
- Number of cleanings (#)
- Discharge amount of head ink 1 (A, B nozzles), M dot
- Discharge amount of head ink 2 (A, B nozzles), M dot
- Discharge amount of head ink 3 (A, B nozzles), M dot
- Discharge amount of head ink 4 (A, B nozzles), M dot
- Cutter solenoid down times (#)

Notes :

- For the CR motor drive count, 1 pass becomes 1 count.
- For the PF motor drive count, 10 meters travel becomes 1 count.
- For 87-inch specifications, the discharge amount of head ink 5 to 8 (A, B nozzles) are added.

| * Maintenance * | | |
|---|---|---|
| WasteInk | 00000000 | Waste liquid tank capacity |
| Cut | 00000000 | Number of cuts |
| | (1/9) | |

| * Maintenance * | | |
|---|---|---|
| Wiper | 00000000 | Number of wipes of the cleaner head |
| Rubbing | 00000000 | Number of rubs of the cleaner head |
| | (2/9) | |

| * Maintenance * | | |
|---|---|---|
| CR Motor | 00000000 | Number of drives of the CR motor |
| PF Motor | 00000000 | Number of drives of the PF motor |
| | (3/9) | |

| | | |
|---|---|---|
| * Maintenance * | | |
| PrintingNumber | 00000000 | Number of printing copies |
| Cleaning | 00000000 | Number of cleanings |
| | (4/9) | |

| | | |
|---|---|---|
| * Maintenance * | | |
| Fire 1-A | 00000000Mdot | Discharge amount of head 1-A nozzle ink |
| Fire 1-B | 00000000Mdot | Discharge amount of head 1-B nozzle ink |
| | (5/9) | |

| | | |
|---|---|---|
| * Maintenance * | | |
| Fire 2-A | 00000000Mdot | Discharge amount of head 2-A nozzle ink |
| Fire 2-B | 00000000Mdot | Discharge amount of head 2-A nozzle ink |
| | (6/9) | |

| | | |
|---|---|---|
| * Maintenance * | | |
| Fire 3-A | 00000000Mdot | Discharge amount of head 3-A nozzle ink |
| Fire 3-B | 00000000Mdot | Discharge amount of head 3-B nozzle ink |
| | (7/9) | |

| | | |
|---|---|---|
| * Maintenance * | | |
| Fire 4-A | 00000000Mdot | Discharge amount of head 4-A nozzle ink |
| Fire 4-B | 00000000Mdot | Discharge amount of head 4-A nozzle ink |
| | (8/9) | |

| | | |
|---|---|---|
| * Maintenance * | | |
| Cut Sole. | 00000000 | Cutter solenoid down time |
| | (9/9) | |

### *(2) Serious error history*

This menu displays the serious errors that have occurred so far.

Notes :

- A serious error history does not include any CPU errors.
- A serious error history can contain up to 32 error events.

```
* Error *
Error0          Y current
Error1          X motor
                (1/16)
```

```
* Error *
Error2          X motor
Error3          X motor
                (2/16)
```

```
* Error *
Error30         Y current
Error31         Y current
                (16/16)
```

## *5.4.8. Head Signal Menu*

This menu is used to check the head-driving signal.

```
F1 →  * Head Signal *
F3 →  Flush          Mode1   ← F2
      Mode2          Mode3   ← F4
                     (1/2)
```

```
F1 →  * Head Signal *
      Mode5          Mode7   ← F2
                     (2/2)
```

*Select :*

```
* Head Signal *
```

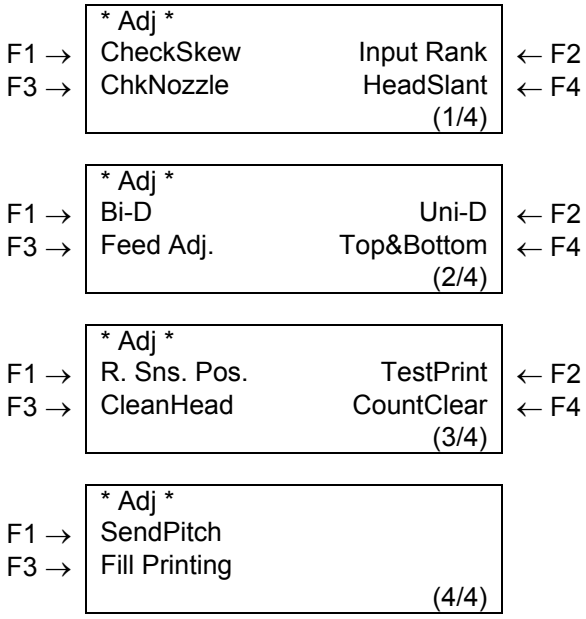
*ENTER :*

```
* Flush *
Drive
```

## 5.5. ADJUSTMENT MENU

In this menu, you can align the printing position and correct the media feed operation.
The Adjustment menu includes following diagnosis menus :

| Initialization item | Description | Refer to |
|---|---|---|
| Skew check | In this menu, you can perform media feed and check the degree of skew in the media feed operation by means of the sensors. | Skew Check Menu |
| Head rank input | Inputs the characteristic value of the installed print head. Ink is replenished after this input. | Head rank input menu |
| Head nozzle check | Prints out a printing to check the ink discharge performance of the head nozzles. | Head Nozzle Check Menu |
| Head angle check | Prints out a print to check for printer head slant. Mechanical adjustment should be performed as necessary. | Head Slant Check Menu |
| Repeatability adjustment | Prints out a print to align the two-way printing position. | Repeatability Adjustment Menu |
| CW adjustment | Prints out a print to adjust any gaps between the heads. | CW Adjustment Menu |
| Band feed correction | Prints out a print to correct the media feed amount for each pass. | Band Feed Correction Menu (X Length) |
| Top & bottom adjustment | Sets the top and bottom margins. | Top & bottom adjustment menu |
| P_REAR sensor position adjustment | Adjusts the position of the P_REAR sensor using sheet media. | P_REAR sensor position adjustment menu |
| Test Print | Prints out a nozzle check pattern and the adjustment variables. | Test print menu |
| Head Wash | Cleans the tubes and heads using cleaning fluid. | Head wash menu |
| Software counter initialization | Clears various software counters. | Software Counter Initialization Menu |
| Feed amount check | Used to check the media feed amount for one band. | Feed Pitch Check Menu |
| Fill printing | A fill printing pattern is printed by both ends of the head. | Fill printing menu |



## *5.5.1. Skew Check Menu*

In this menu, you can perform media feed and check the degree of skew in the media feed operation by means of the sensors.
When you select this item from the Adjustment menu, the machine feeds the length specified by the operation panel and checks for media feed skew by comparing the media edge positions before and after the media feed detected by the sensors.

Notes :

Before performing skew check, ensure that the media is set correctly.
Since the reference position where media has been set is determined the first time the media left edge is detected, errors may result as follows if the media is not setup correctly.

- Media errors occur during skew check and the operation stops.
- "Undefined Media" occurs frequently during media initialization when the power is turned on or media is cut.

| | |
|---|---|
| * Check Skew *<br>0.1 m – 10.0 m +<br>1.0 m - | Set per 0.1 m |

↓ ENTER

| | |
|---|---|
| * Check Skew *<br>Set Paper | When media is not set |

↓ Media set

| |
|---|
| * Check Skew *<br>Paper Initial |

↓ Finishing media initialization

| |
|---|
| * Check Skew *<br>Exc. Skew |

↓ Finishing media edge detection normally

| |
|---|
| * Check Skew *<br>SkewResult + 0.010 mm |

## *5.5.2. Head rank input menu*

Inputs the head rank.
The head rank is used to determine the operation voltage of the head and compensate the temperature.
Input head rank following the steps below.

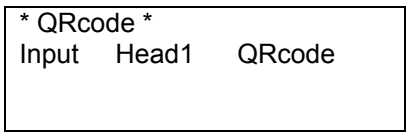
### *(1) Selecting input method*

When inputting head rank, select one of the following methods.

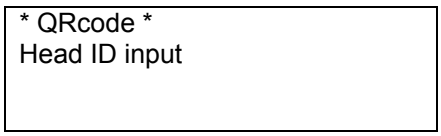
- Input using the QR code
- Input from the operation panel

### *(2) When input using the QR code has been selected*

Make sure that the operation panel displays "Input HEAD1 QR code".
Input the QR code from the QR code reader.



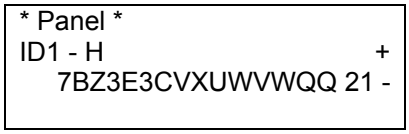

↓ ENTER
Correctly entered : Initial charge menu



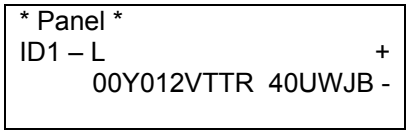

Incorrectly entered : Error
Press “ENTER” to re-enter

### *(3) When input from the operation panel is selected*

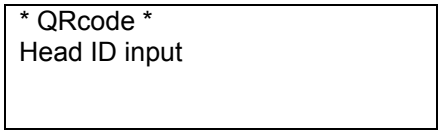
Input the parameters of the upper and lower sections of the head rank using the operation panel keys.




↓ ENTER



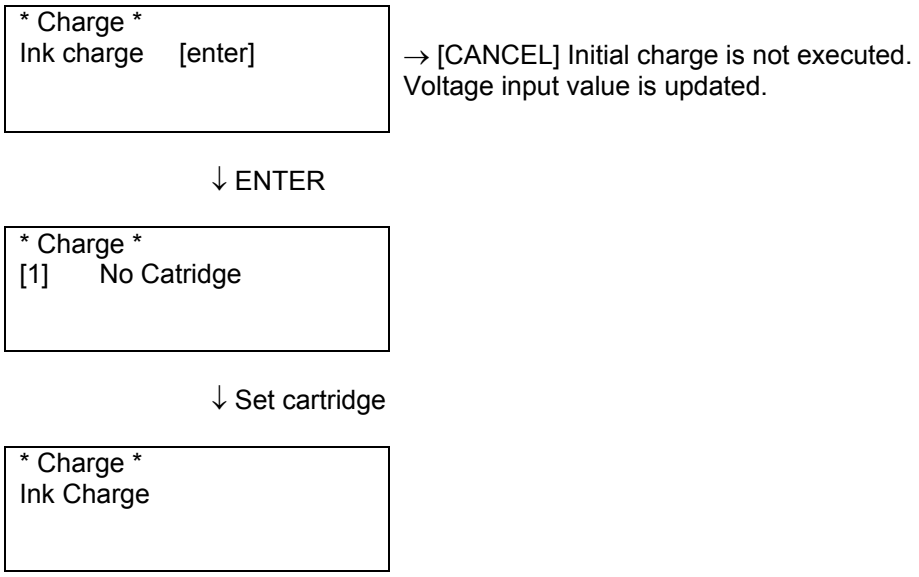

↓ ENTER
Correctly entered : Initial charge menu




Incorrectly entered : Error
Press “ENTER” to re-enter

### *(4) Initial ink charge menu*

When the input head rank has been confirmed, initial ink charge is performed.



## 5.5.3 Head Nozzle Check Menu

In this menu, you can check if the head nozzles, after refilled, can discharge ink correctly by printing a sample printing. To print out head nozzle check patterns, follow the steps below. The following is the description of the printing method.

**Step 1 :** Set media as necessary.

Notes :

- Refer to the User's Guide.
- Pressing the [ENTER] key in the Diagnosis menu in self-diagnostic mode moves the lever up and down.

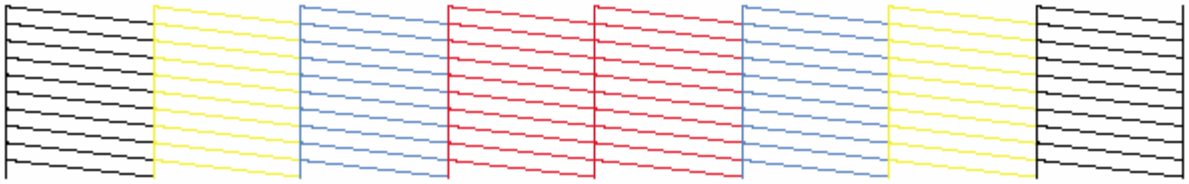
**Step 2 :** After media has been set, the machine prints out head nozzle check patterns in the following modes. The following is the description of the printing method.

- 1 pass Single way

**Step 3 :** Check the printed head nozzle check patterns for the following points. Check points are as follows.

- Ink nozzle discharge amount (omission, discontinuity, meandering)
- Satellite
- T fence
- Nozzle alignment in vertical direction
- Nozzle alignment in horizontal direction

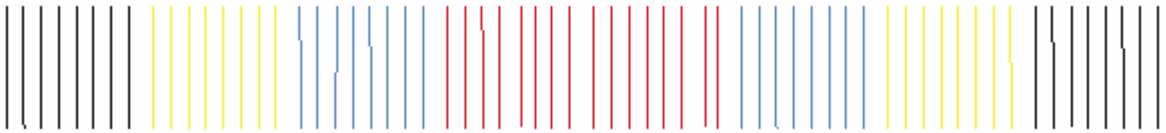
Nozzle check: Prints out patterns in the order of 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B.



Nozzle alignment in vertical direction: Prints out patterns in the order of 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B.

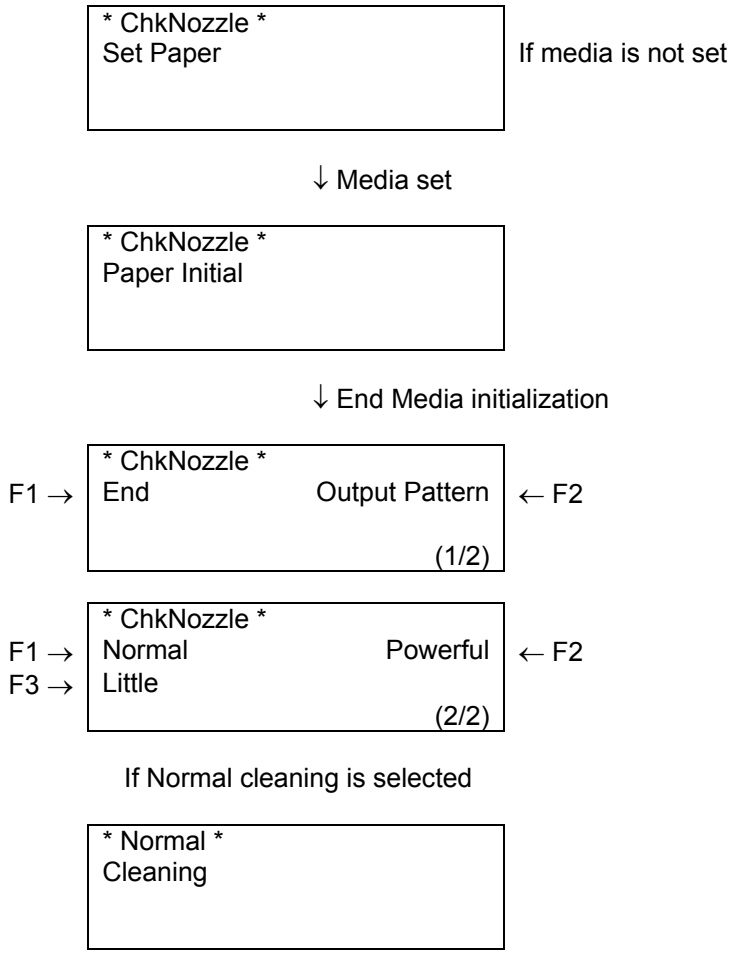
Nozzle alignment in horizontal direction (CW): Prints out patterns in the order of 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B.

Nozzle alignment in horizontal direction (CCW): Prints out patterns in the order of 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B.



**Step 4 :** If any abnormal conditions are found in the ink discharge status of the head nozzles, perform ink purge on the relevant heads.

**Step 5 :** After the ink purge, the system returns to the purge selection menu.



## *5.5.4. Head Slant Check Menu*

This menu prints out a sample printing to check for head slant.

| Item | Description |
|---|---|
| Slant | All head slant check. |
| Front and back | Front and back position and slant of each head relative to the reference head check. |
| All | Confirmation of the forward and rear positions for all nozzle rows and all heads. |
| end | Check complete. |

### *5.5.4.1. Slant*

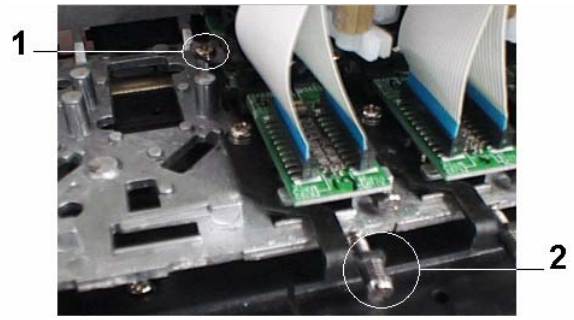
To perform a Head Slant Adjustment, please follow the steps mentioned below.

**Step 1 :** Go to [Adjust : Head Slant].

**Step 2 :** Print out [SLANT] pattern two times.

**Step 3 :** Remove the Damper Press.

**Step 4 :** Loosen the screw which secures the Head Fixing Plate.

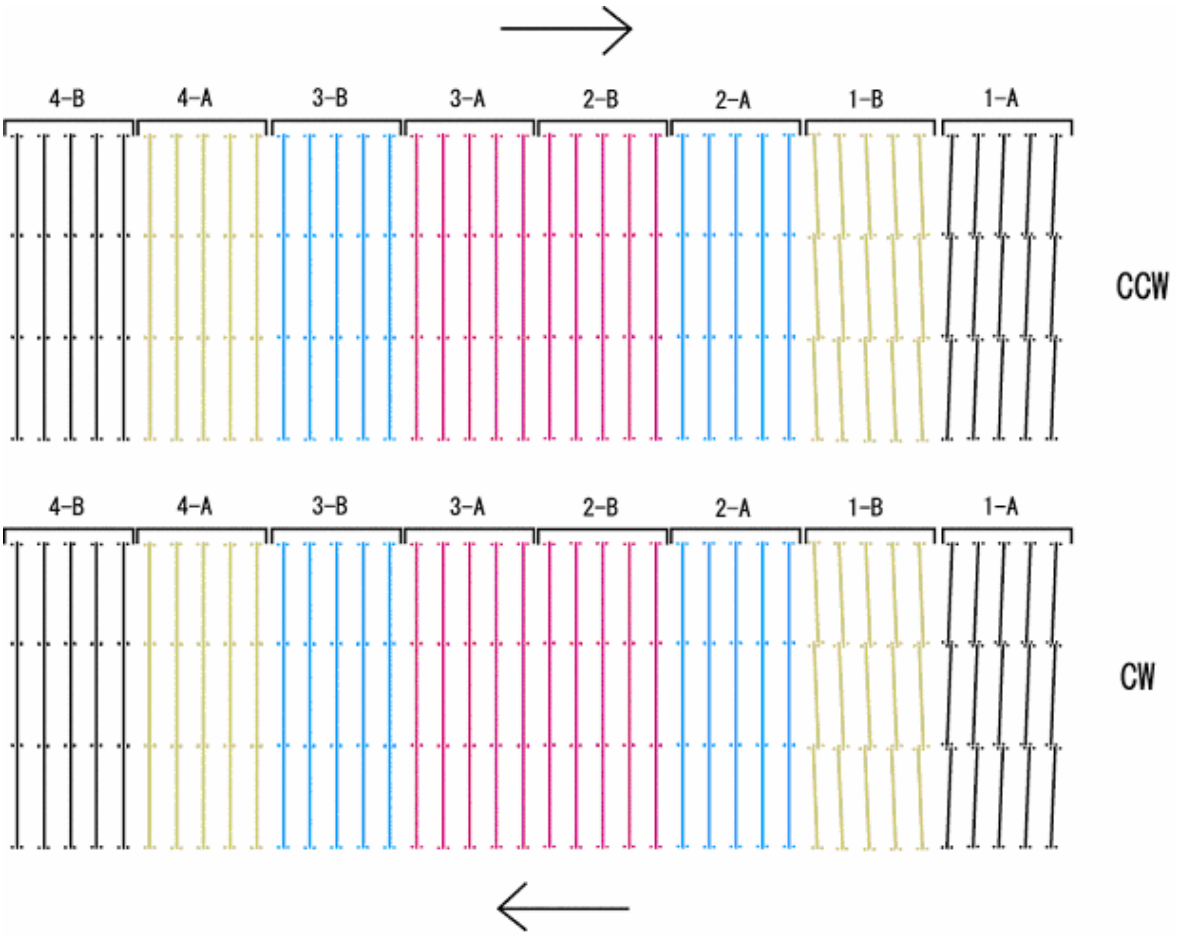


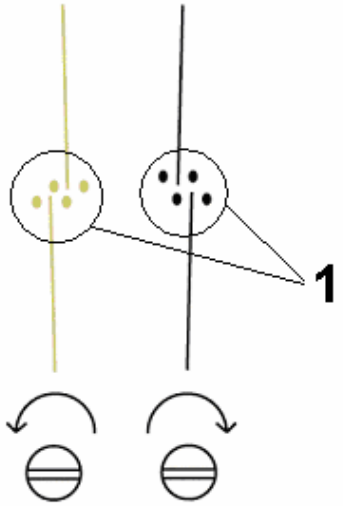

1 = Head Fixing Plate securing screw
2 = Slant Adjust Screw

**Step 5 :** Adjust the Head Slant by moving the Head Slant Adjust Screw.

**Caution :**

Please adjust so each pattern edge is a straight line.
In case CW is aligned and CCW might not be aligned, adjust them as the deviation amount of CW and CCW should be the same. This gives less difference of the Bi-directional print.
In case you plan to use the printer as proofer, only adjust CW.




1 = This area should be a straight line.

**Step 6 :** Tighten the screw, which secures the Head Fixing Plate.

**Step 7 :** Repeat step 1 to 6 until the adjustment is correct.

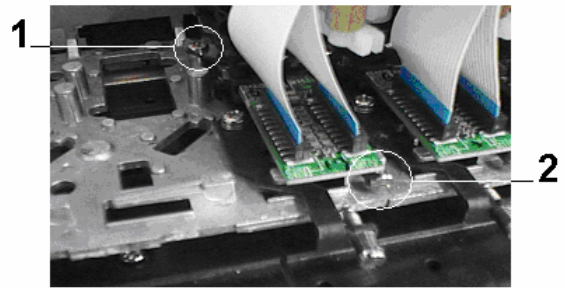
### *5.5.4.2. Front and back*

To perform a Head Front/Back Adjustment, please follow the steps mentioned below.

**Step 1 :** Go to [Adjust : Head Slant].

**Step 2 :** Print out [Front/Back] pattern

**Step 3 :** Loosen the screw, which secures the Head Fixing Plate.

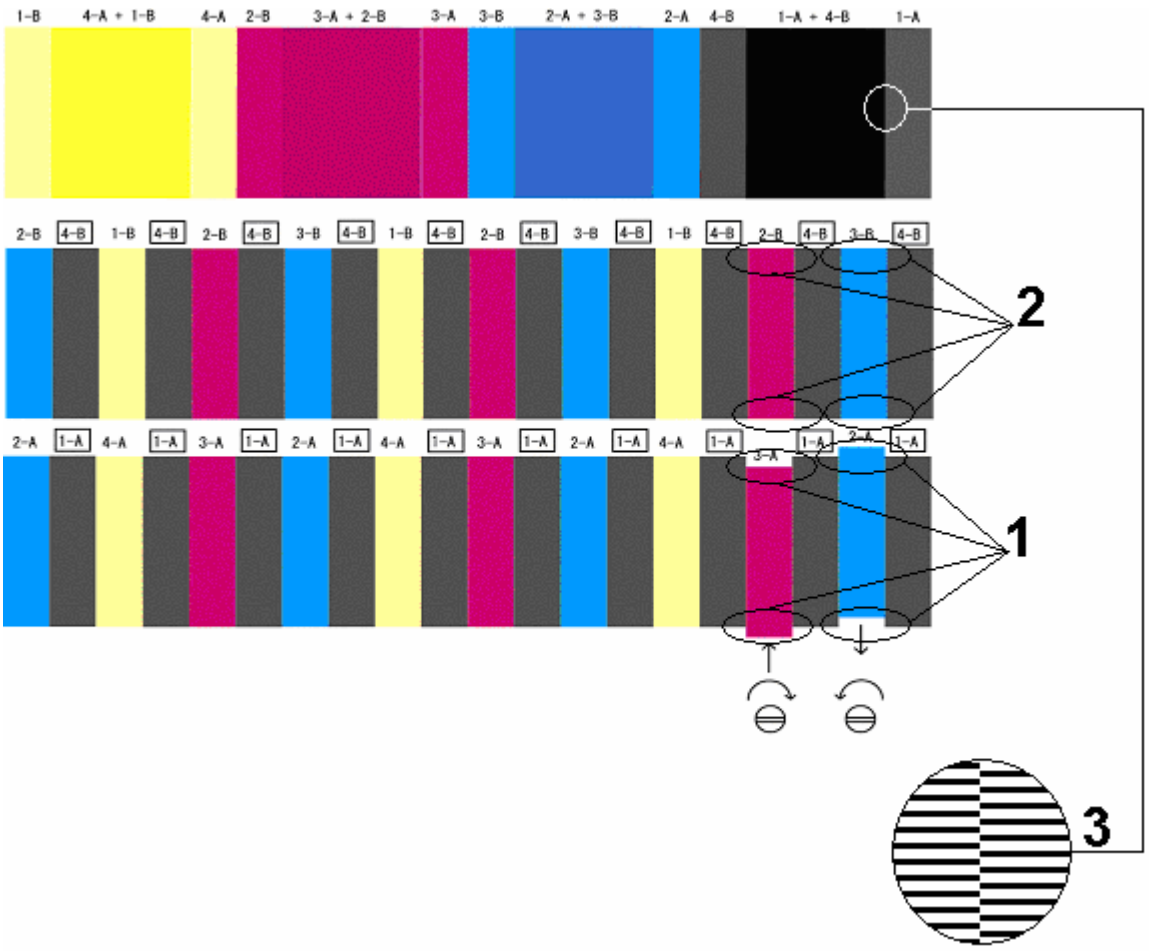



1 = Head fixing plate securing screw
2 = Front/Back Adjustment Screw

**Step 4 :** Adjust the head front/back position by moving the Head Front/Back Adjustment Screw.

**Caution :**

Please note that the reference Head of the 50 and 64 inch model is the first Head, the reference Head of a 87 inch model printer is the third Head.
Due to the head characteristics, the top (back) and bottom (front) lines of the pattern might not be aligned. If this is the case, adjust the bottom (front) and top (back) difference amount equally.




1 = Adjust this area so it becomes a straight line.
2 = Check if this area is a straight line.
3 = Check if the lines of “1A and 4B” go in the centre
(Also check lines “2A and 3B”, “3A and 2B” and “4A and 1B”

**Step 5 :** Tighten the screw which secures the Head Fixing Plate.

**Step 6 :** Repeat step 1 to 5 until the adjustment is correct.

Notes :

Please note that when executing “CHECK” in the menu, the plot will not be a straight line. A & B are alternating!

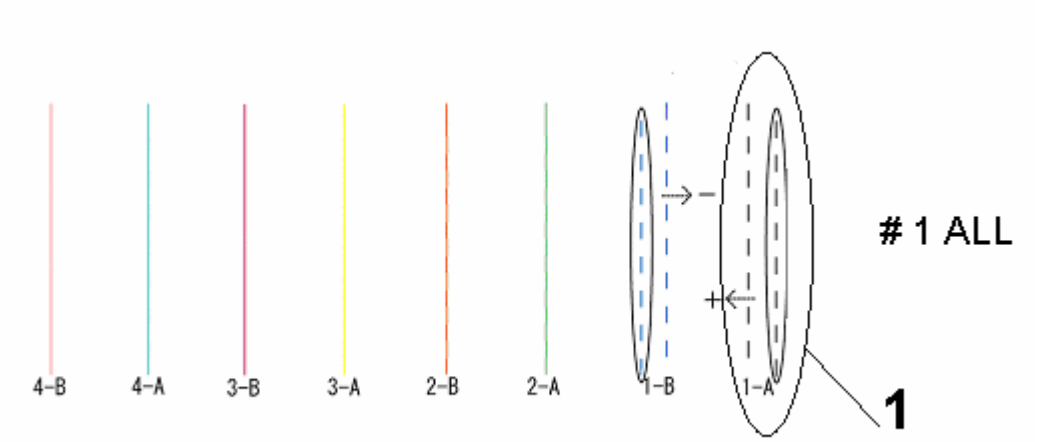
## 5.5.5. Repeatability Adjustment Menu

This menu is used to align the head positions for two-way printing.
To align the head position for two-way printing, you should first print out a Bi-D printing and identify the difference between the CW printing position and the CCW printing position.

To perform a Bi-directional Adjustment, please follow the steps mentioned below.

**Step 1 :** Go to [Adjust : Bi-D].

**Step 2 :** Print out the Bi-Directional pattern.




1 = Adjust this dash line so it becomes a straight line.

**Caution :**

For a straight line :
→ In case the reference is on the right side, use the plus (+) value to adjust.
→ In case the reference is on the left side, use the minus (-) value to adjust.

**Step 3 :** Adjust the Bi-Directional for every head height.

- # 1 : Head height LOW
- # 2 : Head height MIDDLE
- # 3 : Head height HIGH

**Caution :**

Due to the tolerance of parts and assembly precision, all lines might not be straight. If this is the case, adjust the bi-directional difference amount equally.

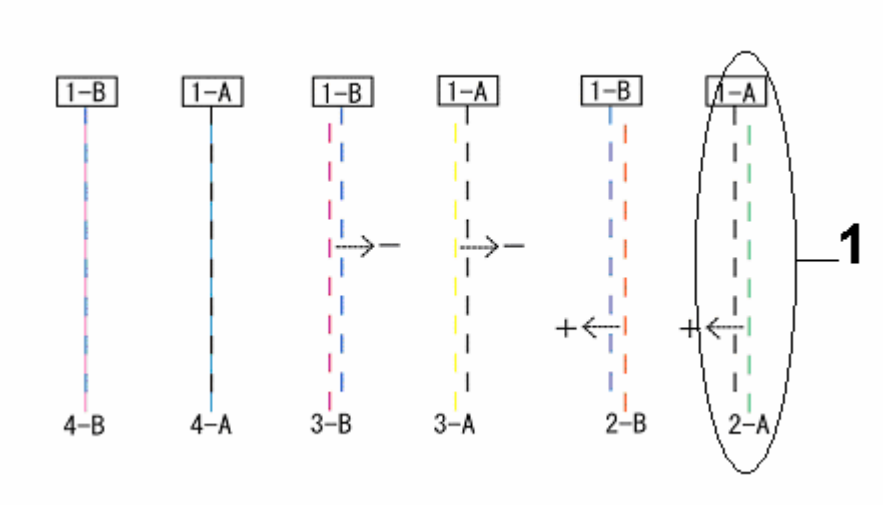
## 5.5.6. CW Adjustment Menu

In this menu, you can adjust the gap (CR moving direction) between two heads.
To adjust the gap between two heads, you should first print out a Uni-D printing and identify the difference between the selected two heads.
Then, you enter the difference for the relevant parameter.

To perform a Uni-directional Adjustment, please follow the steps mentioned below.

**Step 1 :** Go to [Adjust : Uni-D].

**Step 2 :** Print out the adjustment pattern.




1 = Adjust this dash line so it becomes a straight line.

**Step 3 :** Adjust each Head to become a straight line. (The 1st Head is the reference Head.)

**Caution :**

Due to the tolerance of parts and assembly precision, all lines might not be straight. If this is the case, adjust the uni-directional difference amount equally.

## *5.5.7. Band Feed Correction Menu (X Length)*

In this menu, you can correct the media feed distance.
To correct the media feed distance, you must first print out check patterns and measure the distance between lines drawn in the media feed direction. Then you enter the measured value through this menu.
The system uses this entered value to determine the PF encoder resolution parameter in the firmware.

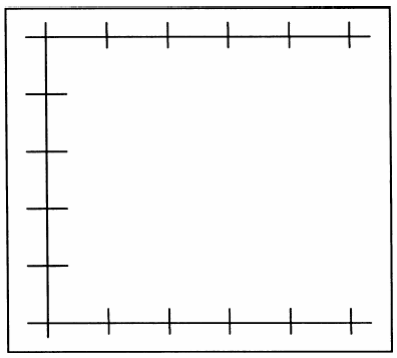
To perform an X-length Adjustment, please follow the steps mentioned below.

**Step 1 :** Go to Feed Adjustment.

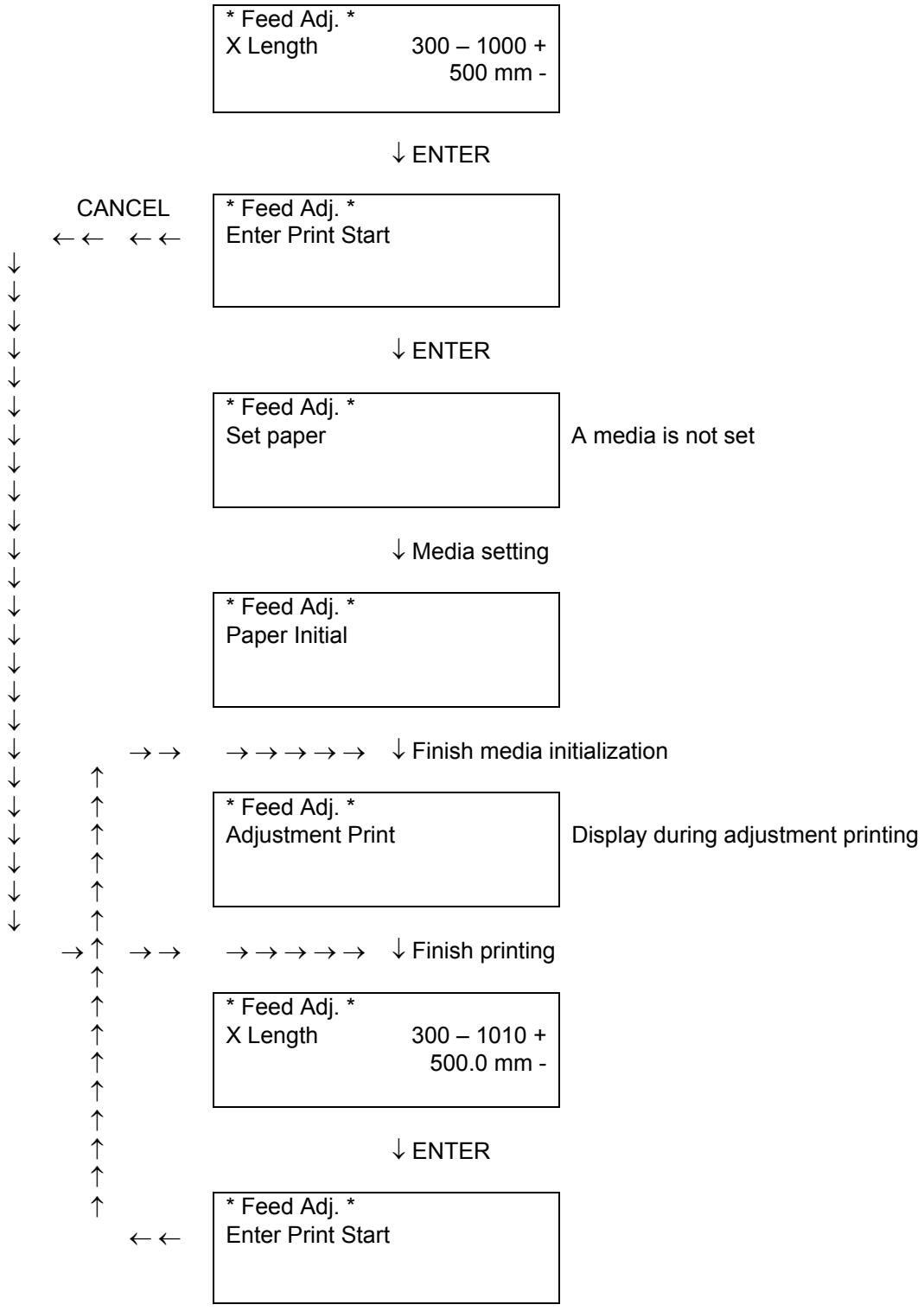
**Step 2 :** Set the parameter value to 900 mm.

**Step 3 :** Print out the Feed Adjustment pattern.

**Step 4 :** Measure the printed Band Feed Correction pattern.



**Step 5 :** Enter the measured value as the Media Feed Distance parameter.


* Feed Adj. *
X Length 300 – 1000 +
500 mm -
↓ ENTER
CANCEL
← ← ← ←
* Feed Adj. *
Enter Print Start
↓ ENTER
* Feed Adj. *
Set paper
A media is not set
↓ Media setting
* Feed Adj. *
Paper Initial
→ → → → → → → ↓ Finish media initialization
* Feed Adj. *
Adjustment Print
Display during adjustment printing
→ → → → → → → → ↓ Finish printing
* Feed Adj. *
X Length 300 – 1010 +
500.0 mm -
↓ ENTER
* Feed Adj. *
Enter Print Start
← ←

## *5.5.8. Top & bottom adjustment menu*

Sets printing margins.
Make adjustments following the steps below.

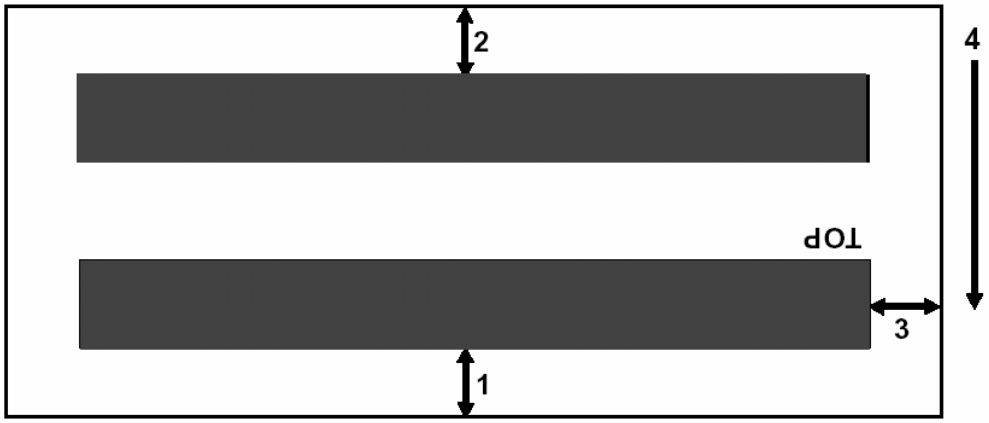
**Step 1 :** Set media as necessary.

**Step 2 :** After the media has been set, pattern printing with band feed compensation and media cutting are performed. The following is the description of the printing method.

- Black, one path, one-way

**Step 3 :** Measure the following adjustment items for the results of the printing of the top & bottom adjustment pattern. Measurements are carried out at the center of the media. The adjustment items are as follows.

- Top distance
- Bottom distance
- Side margin




1: Top distance
2: Bottom distance
3: Side margin
4: Media feed direction

**Step 4 :** Input each measurement as a parameter.

| | |
|---|---|
| * Top&Bottom *<br>Set Paper | If media is not set |

↓ Set media

| |
|---|
| * Top&Bottom *<br>Paper Initial |

↓ End Media Initialization

| | |
|---|---|
| * Top&Bottom *<br>Adjustment Print | Display during adjustment printing |

| |
|---|
| * Top&Bottom *<br>Top Length 0 – 40.0 +<br>5.0 mm - |

| |
|---|
| * Top&Bottom *<br>Top Length 0 – 40.0 +<br>5.0 mm - |

| |
|---|
| * Top&Bottom *<br>Side 0 – 20.0 +<br>5.0 mm - |

## *5.5.9. P_REAR sensor position adjustment menu*

Adjust the P_REAR sensor position in order to accurately detect the length of the cut media.
During this adjustment, the P_REAR sensor position can be adjusted inside the firmware by referring to the nozzle, in order to obtain a maximum printable area starting from the ends of the media.
Make adjustments following the steps below.

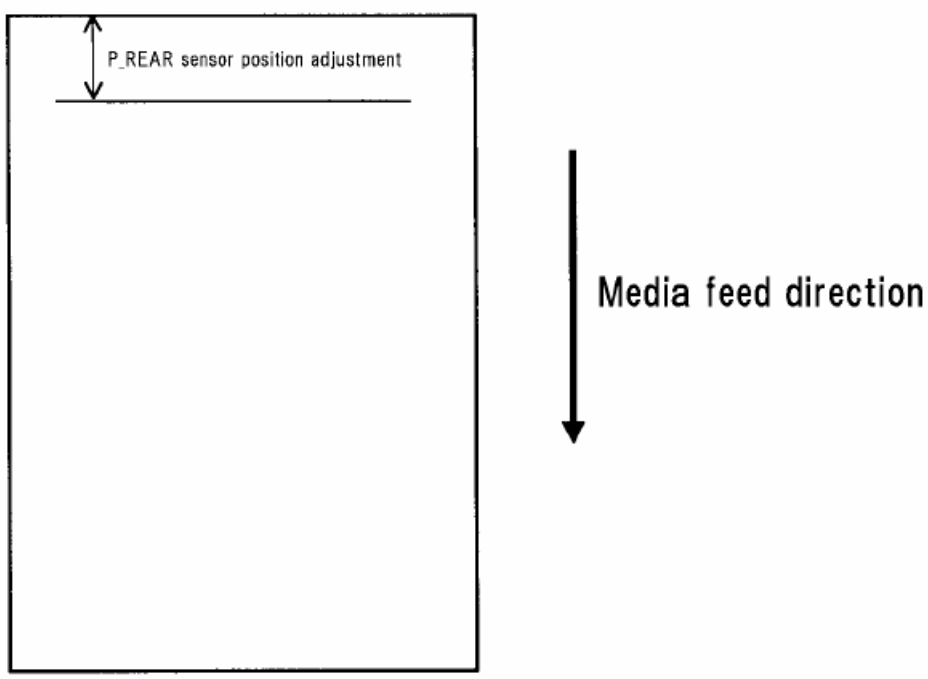
**Step 1 :** Set media as necessary.

Notes :

- Use cutting media for adjusting the P_REAR sensor. Set A3 cutting media in portrait orientation.
- P_REAR sensor position adjustment is a process necessary during manufacturing. This does not need to be done when band feed is compensated.

**Step 2 :** After the media has been set, a pattern printing with the P_REAR sensor position adjustment is performed. The following is the description of the printing method.

- Draws a horizontal line (black 1 dot line) 17 mm away from the media end.




**Step 3 :** Measure the distance from the media end to the line just drawn.

**Step 4 :** Input the measurement as the parameter of the P_REAR sensor position.

| | |
|---|---|
| * Rear Sensor *<br>Set Cutting Paper | |
| ↓ Set media | |
| * Rear Sensor *<br>Paper Initial | If media is not set |
| ↓ End media initialization | |
| * Rear Sensor *<br>Paper Width 297.0 mm | Check media width |
| ↓ ENTER | |
| * Rear Sensor *<br>Rear Sensor 7.0 – 27.0 +<br>17.0 mm - | |

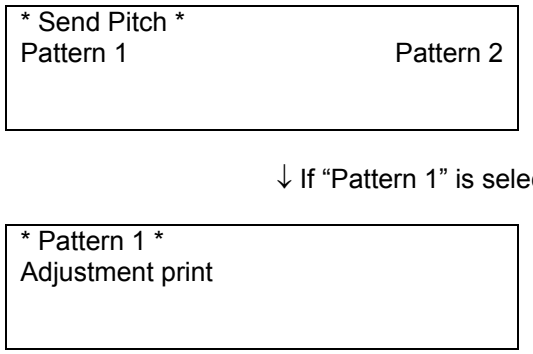
## *5.5.10. Test print menu*

In this menu, you can print out adjustment patterns for checking various adjustment items.
Make adjustments following the steps below.

**Step 1 :** Set media as necessary.

**Step 2 :** After media has been set, the machine prints out the following test Printings.
- Nozzle check: Head nozzle check pattern
- Adjustment variables: Set values of various adjustment variables

**Step 3 :** Perform selected test print.



## *5.5.11. Head wash menu*

In this menu, ink is drained and the head is cleaned at the completion of the manufacturing process and before replacing the print head.
Execute a cleaning following the steps below.

**Step 1 :** Initialize the waste ink history.
- Refer to 'Parameter Initialization Menu'

**Step 2 :** Discharge the waste fluid from the waste fluid bottle.

**Step 3 :** Press the [ENTER] key in the operation panel to confirm the head cleaning menu.

**Step 4 :** Remove all ink cartridges.

**Step 5 :** Press the [ENTER] key in the operation panel to drain the ink.

**Step 6 :** After the ink has been drained, install the head cleaning fixture.

**Step 7 :** Press the [ENTER] key in the operation panel to supply the cleaning fluid.

**Step 8 :** After the cleaning fluid has been supplied, remove the head cleaning fixture.

**Step 9 :** Drain the cleaning fluid by pressing the [ENTER] key in the operation panel.

**Step 10 :** Initialize the waste ink history.

Notes :

- When performing the ink cleaning, always initialize the waste ink history then start a head cleaning. Otherwise, during cleaning, the waste ink tank becomes full and cleaning is interrupted.
- After the head cleaning, always initialize the waste ink history. Otherwise, during filling, the waste ink tank becomes full, and filling is interrupted.
- Before ink filling, discharge the cleaning fluid, and wait for at least 30 minutes. Otherwise, the printing may be unstable.

```
* Clean Head *
Remove cartridge
```

↓ Eject all cartridge and press the [ENTER] key to drain ink

```
* Clean Head *
Ink Discharge
```

↓ End Ink draining

```
* Clean Head *
Set Cleaning jig
```

↓ Set the head cleaning jig and press the [ENTER] key to charge the cleaning liquid.

```
* Clean Head *
Head Cleaning
```

↓ Charge cleaning liquid

```
* Clean Head *
Remove cleaning jig
```

↓ Remove the head cleaning jig and press the [ENTER] key to drain the cleaning liquid.

```
* Clean Head *
Head Cleaning
```

## *5.5.12. Software Counter Initialization Menu*

This menu initializes the software counters such as the ink amount counter.

Notes :

- Before delivery, always initialize the software counters.

The software counters that can be initialized through this menu are as follows.

| Counter | Initial value |
|---|---|
| Ink amount counter | 0 |
| Ink consumption counter 1 | 0 |
| Ink consumption counter 2 | 0 |
| Ink consumption counter 3 | 0 |
| Ink consumption counter 4 | 0 |
| Ink consumption counter 5 | 0 |
| Ink consumption counter 6 | 0 |
| Ink consumption counter 7 | 0 |
| Ink consumption counter 8 | 0 |
| Cumulative printout timer | 0 |
| Waste ink counter | 0 |
| Ink ID mask | Reset |
| Initial ink charge flag | Set |

Pressing the [ENTER] key in the operation panel performs the software counter initialization. Pressing the [CANCEL] key cancels the initialization.

```
* CountClear *
Counter reset ?
```

↓ ENTER

```
* CountClear *
Wait little time
```

↓ End initialization

```
* CountClear *
R. Sns. Pos.          Testprint
CleanHead             CountClear
                          (3/4)
```

## *5.5.13. Feed Pitch Check Menu*

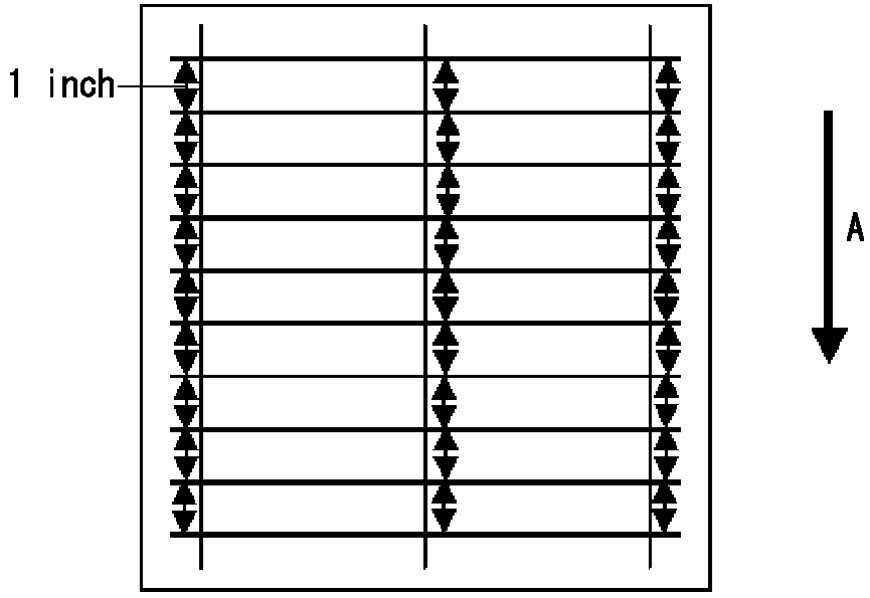
In this menu, you can check the media feed amount for one band by reviewing a sample printing. There is no adjustment item.
To check the feed pitch, follow the steps below.

**Step 1 :** Set media as necessary.

**Step 2 :** Select "Adj:SendPitch".

**Step 3 :** Select "Pattern 1" or "Pattern 2" to print feed pitch check patterns.
- "Pattern 1": Drawn with 1 inch (2.54 cm) intervals
- "Pattern 2": Draw a repetitive pattern with 1/4 inch (0.635 cm) intervals every 4 lines and 0.63 cm intervals between each of the 4 lines.

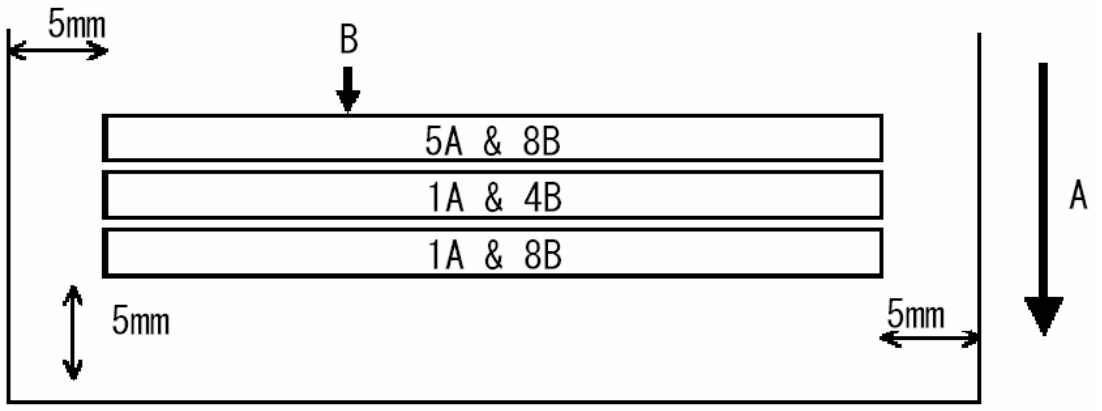
**Step 4 :** Confirm that it is drawn at 1 inch intervals as shown in the following drawing.




A = Media feed direction

## 5.5.14. Fill printing menu

A fill printing pattern is printed by both ends of the head.



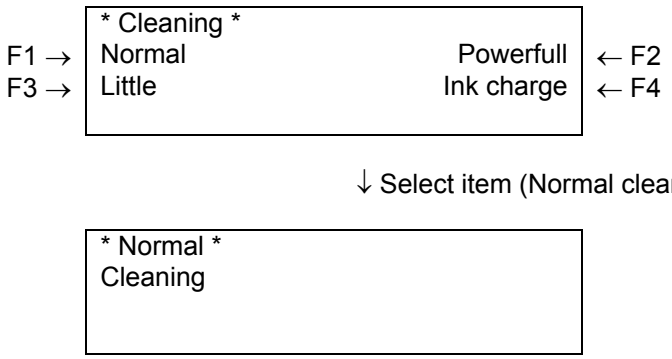

A: Media feed direction
B: 100% print

50-inch specifications and 64-inch specifications are pattern printed in the sequence 1A&4B, 1A&4B, 1A&4B, while 87-inch specifications are printed in the sequence 1A&8B, 1A&4B, 5A&8B.

# 5.6. PURGE MENU

In this menu, you can purge ink from the printer heads.
The Purge menu includes the following diagnosis items.

| Diagnosis item | Description |
|---|---|
| Normal | Performs normal purge. |
| Powerful | Performs powerful purge. |
| Little | Performs minimum purge. |
| Initial ink charge | Performs initial ink charge. |



# 5.7. SAMPLE PRINTING MENU

This menu prints out a sample printing.
The Sample printing menu includes the following items.

| Diagnosis item | Description |
|---|---|
| Nozzle Check | Prints the head nozzle check pattern. |
| Adjustment variables | Prints out the set values of various adjustment items. |

Notes :

- When serial numbers are not input to this product, the serial numbers become blank spaces.

F1 → | * Print * | Nozzle Adj. Variable | ← F2

↓ Select item (Nozzle check)

| * Check Nozzle * |
|---|
| Adjustment Print |

# 5.8. PARAMETER MENU

In this menu, you can modify the set values of various adjustment items (adjustment parameter).
The Parameter menu includes the following items.

| Initialization item | Description | Refer to |
|---|---|---|
| Initialize. | Initializes the adjustment parameters. | Parameter Initialization Menu |
| Update | Updates the adjustment parameters. | Parameter Update Menu |

F1 → | * Parameter * / Initialize Update | ← F2

## 5.8.1. Parameter Initialization Menu

This menu initializes the adjustment parameters. The parameters that can be initialized in this menu are as follows.

- Capping position
- Media feed distance
- Serial number
- Head history
- Wiper history
- Waste ink history
- CR motor history
- PF motor history
- Initialization of all items

F1 → | * Initialize * / P. FeedLen serialNo. | ← F2
F3 → | Head Wiper | ← F4
(1/2)

F1 → | * HeadSlant * / Waste ink CR motor | ← F2
F3 → | PF motor All | ← F4
(2/2)

↓ Select item (P. FeedLen.)

* P. FeedLen. *
Initialize OK ?

↓ ENTER

* P. FeedLen. *
Initialize Parameter

## *5.8.2. Parameter Update Menu*

This menu updates the adjustment parameters. The parameters that can be updated through this menu are as follows.

- Head voltage
- Printing position alignment
- CW adjustment
- Media feed distance
- Mechanical parameter
- Ink parameter
- Ink ID mask
- Serial number

Notes :

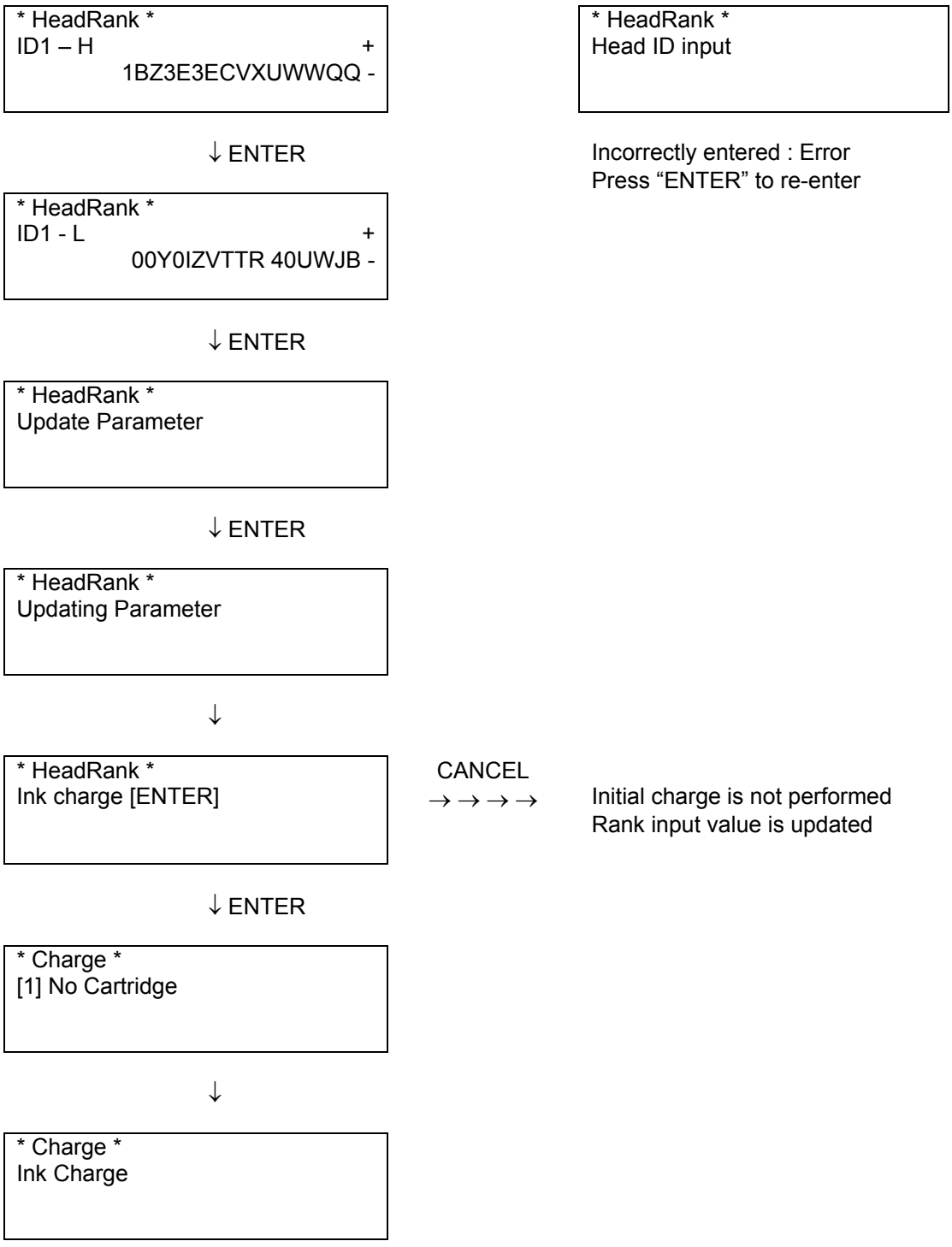
- If you update any parameter in the Parameter Update menu, always turn the power OFF after quitting the menu. The updated parameters will not be stored in the flash memory unless the system power is turned OFF.

| | | | |
|---|---|---|---|
| | * Update * | | |
| F1 → | HeadRank | PrintPos. | ← F2 |
| F3 → | CW Adj. | P. FeedLen. | ← F4 |
| | | (1/2) | |

| | | | |
|---|---|---|---|
| | * Update * | | |
| F1 → | Mechparm | Inparm | ← F2 |
| F3 → | Ink ID mask | serialNo. | ← F4 |
| | | (2/2) | |

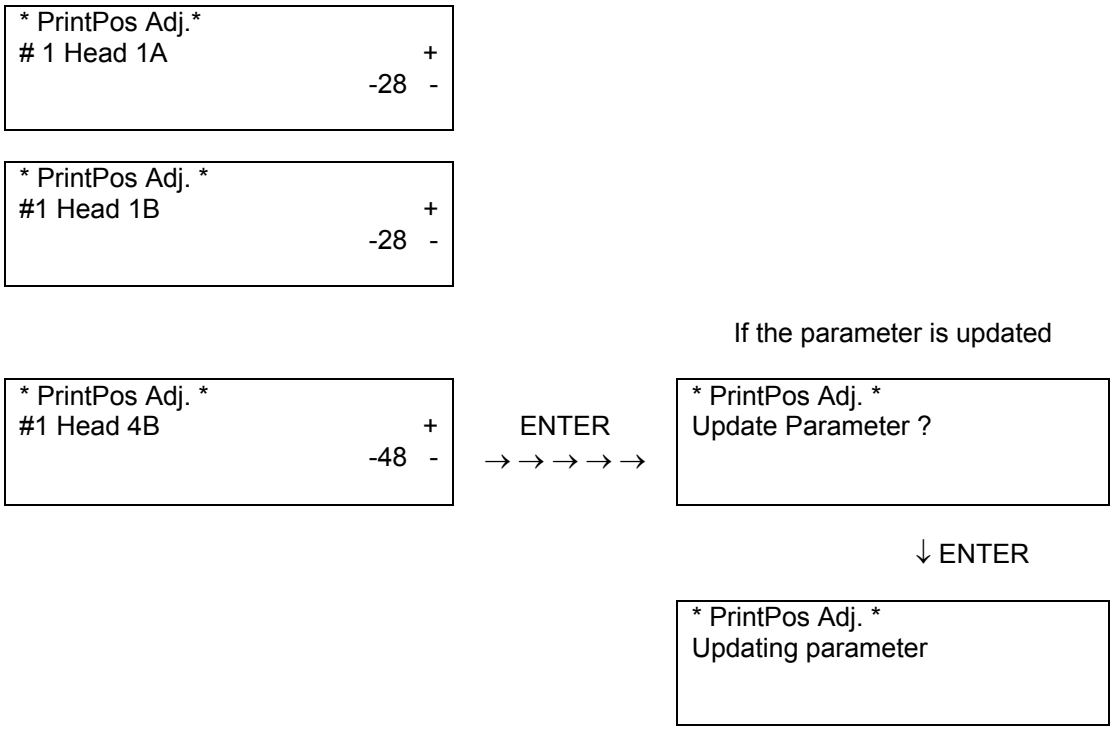
## *(1) Head voltage*

In this menu, you can enter a head voltage. The head voltage is used to determine the printer head-driving voltage and perform temperature correction.
After a head voltage has been entered, the system shifts to the Ink Charge menu.



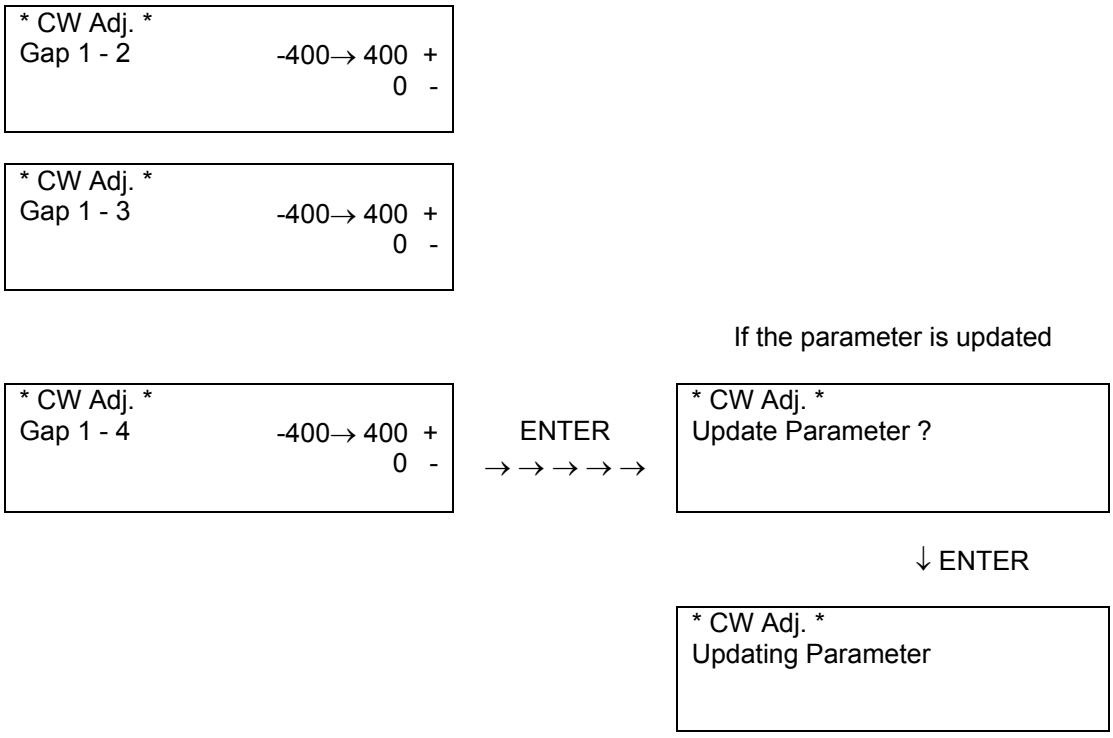
### *(2) Printing position alignment*

This updates the printing position alignment parameters.




### *(3) CW*

This updates the CW adjustment parameters.



### *(4) Media feed distance*

This updates the media feed distance parameters.

```
* PaperFeedLen. *
X Length                290 – 1010 +
                          500.0 mm -
```

↓ ENTER

```
* PaperFeedLen. *
Update Parameter ?
```

↓ ENTER

```
* Update *
Updating Parameter
```

## *(5) Mechanical parameter*

Update the mechanical position parameters. The setup items are as follows.

- Top distance
- Bottom distance
- Side margin
- P_REAR sensor position

| * Mechparm * | |
|---|---|
| Top Length | 0 – 40.0 +<br>5.0 mm - |

| * Mechparm * | |
|---|---|
| Bottom | 0 – 40.0 +<br>5.0 mm - |

| * Mechparm * | |
|---|---|
| Side | 0 – 20.0 +<br>5.0 mm - |

| * Mechparm * | |
|---|---|
| Rear Sensor | 0 – 27.0 +<br>17.0 mm - |

↓ ENTER

| * Mechparm * |
|---|
| Update Parameter |

↓ ENTER

| * Mechparm * |
|---|
| Updating Parameter |

## *(6) Ink parameter*

This updates the ink parameter. The setup items are as follows.
Set: Ink not filled
Reset: Ink filled

Notes :

- When "set" has been selected on the ink parameter update menu, the product implements initial filling operations at the next start up.

```
* InkParameter *
Init. Fill Flag          +
                       Set -
```

↓ ENTER

```
* InkParameter *
Update Parameter ?
```

If the parameter is changed

↓ ENTER

```
* InkParameter *
Updating Parameter
```

## *(7) Ink ID mask*

Update the ink ID mask parameters. The setup items are as follows.

- Set: Ink ID is always fixed. When a mask has been set, any cartridge inserted will be handled as dye 4 colours fixed.
- Reset: Resets the ink ID mask. Cartridge recognition becomes available via smart chip.

```
* Ink ID mask *
Ink ID mask              +
                       Set -
```

↓ ENTER

```
* Ink ID mask *
Update Parameter
```

If parameter is updated

↓ ENTER

```
* Ink ID mask *
Updating Parameter
```

## *(8) Serial number entry*

This is for entering the serial number.

| * SerialNo. * |
|---|
| + |
| DD5*000001 - |

| * SerialNo. * |
|---|
| + |
| DD5C*00001 - |

| * SerialNo. * |
|---|
| + |
| DD5C1*0001 - |

| * SerialNo. * |
|---|
| + |
| DD5C12*001 - |

| * SerialNo. * |
|---|
| + |
| DD5C123*01 - |

| * SerialNo. * |
|---|
| + |
| DD5C1234*1 - |

| * SerialNo. * |
|---|
| + |
| DD5C12345* - |

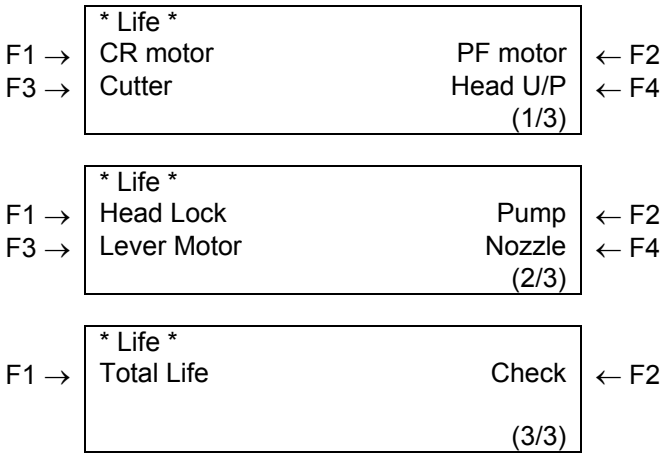
Notes :

- The third figure of a serial number differs with the machine size.
  - 5: 50 inch
  - 6: 64 inch
  - 8: 87 inch

# 5.9. ENDURANCE RUNNING MENU

In this menu, you can perform endurance running on the printer heads.
The Endurance Running menu includes the following items.

| Initialization item | Description | Refer to |
|---|---|---|
| CR Motor | Performs carriage stroke. | CR Motor Endurance Menu |
| PF motor | Drives the PF motor. | PF Motor Endurance Menu |
| Razor Blade | Cuts media. | Cutter Endurance menu |
| Head up/down | Changes over the head height repeatedly. | Head Up/Down Endurance Menu |
| Head lock | Tests head lock operation.<br>Performs wiper up/down operation via the selecting menu. | Head Lock Endurance menu |
| Pump | Drives the positive/negative pressure pump motor. | Pump Endurance menu |
| Lever motor | Drives the lever motor. | Sequential Printing Endurance Menu |
| Nozzle print | Prints out a printing by printer heads repeatedly. | Sequential Printing Endurance Menu |
| General endurance | Performs endurance running on the CR, PF and head up/down concurrently. | General Endurance Menu |
| Confirmation | Check the number of endurance running cycles. | Endurance Running Check Menu |



## 5.9.1. CR Motor Endurance Menu

This menu performs endurance running for the CR motor.
You can perform carriage stroke according to your desired setting. The available settings are shown below.

| Setup item | Description | Parameters | Remarks |
|---|---|---|---|
| Operation speed (CW, CCW) | Sets carriage operation speed (CW and CCW). | 240, 300 | Unit: cps |
| Number of endurance running cycles | Set the number of endurance running cycles | -1 to 10000 | |

Notes :

- If the number of endurance running cycles has been set to -1, the units continuously repeat endurance running until a key input is given from the operation panel.
- The maximum counter value for endurance running cycles is 99999999 (up to 8-digit number). If the number of cycles exceeds the maximum value, the counter is reset to 0.

| | |
|---|---|
| * Speed CW *<br>Speed 240 / 300 +<br>240 cps - | Speed (CW) |

↓ ENTER

| | |
|---|---|
| * Speed CCW *<br>Speed 240 / 300 +<br>240 cps - | Speed (CCW) |

↓ ENTER

| | |
|---|---|
| * Aging Count *<br>Count -1 → 10000 +<br>50 - | Number of endurance running cycles |

↓ ENTER

| | |
|---|---|
| * CR Motor *<br>Count 5 | Perform endurance running |

↓ ENTER

| |
|---|
| * CR Motor *<br>End 50 |

## *5.9.2. PF Motor Endurance Menu*

This menu performs endurance running for the PF motor.
You can drive the PF motor according to your desired settings. The available settings are shown below.

| Setup item | Description | Parameters | Remarks |
|---|---|---|---|
| Media feed amount | Sets amount of media feeds per endurance operation. | 0 to 100 | Unit: mm |
| Number of endurance running cycles | Set the number of endurance running cycles | -1 to 10000 | |

Notes :

- The motor drive parameters are determined as follows depending on the media feed amount.

| | |
|---|---|
| Speed | 54 cps |
| Acceleration | 0.1 G |
| Deceleration | 0.1 G |

- If the number of endurance running cycles is set to -1, the units continuously repeat endurance running until a key input is given from the operation panel.
- The maximum counter value for endurance running cycles is 99999999 (up to 8-digit number). If the number of cycles exceeds the maximum value, the counter is reset to 0.

| | | |
|---|---|---|
| * FeedAmount *<br> | 0 – 100.0 mm +<br>0.1 mm - | Media feed amount |

↓ ENTER

| | | |
|---|---|---|
| * LifeCount *<br>Count | -1 → 10000 +<br>50 - | Number of endurance running cycles |

↓ ENTER

| | | |
|---|---|---|
| * PFmotor *<br>Count | 5 | Perform endurance running |

↓ ENTER

| | |
|---|---|
| * PFmotor *<br>End | 50 |

## *5.9.3. Cutter Endurance menu*

This menu performs endurance running for the cutter.
You can perform the cutting operation according to the settings.

**Caution :**

Pay attention to the following points when performing the cutter endurance operation.
- Install usable ink cartridges.
- Make sure that media initialization is complete.

Performing the cutter endurance operation without ink cartridges could result in damage to the product if the cutter fails outside the cutting range.

The available settings are shown below.

| Setup item | Description | Parameters | Remarks |
|---|---|---|---|
| Page size | Sets amount of media feeds per endurance operation. | 30 to 3000 | Unit: mm |
| Number of endurance running cycles | Set the number of endurance running cycles | -1 to 10000 | |
| Waiting time | Set the waiting time after one cycle of endurance running | 40 | Unit: second |

Notes :

- If the number of endurance running cycles is set to -1, the units continuously repeat endurance running until a key input is given from the operation panel.
- The maximum counter value for endurance running cycles is 99999999 (up to 8-digit number). If the number of cycles exceeds the maximum value, the counter is reset to 0.
- The waiting time is not modifiable.

| | | |
|---|---|---|
| * Page size * | 30 – 3000 mm +<br>30 mm - | Page size |
| ↓ ENTER | | |
| * Cutter * | | |
| Count | -1 → 10000 +<br>50 - | Count Endurance |
| ↓ ENTER | | |

| | | |
|---|---|---|
| * Cutter *<br>Time Wait (sec) | 40 | Check Waiting time |

↓ ENTER

| | | |
|---|---|---|
| * Cutter *<br>Count | 5 | Perform endurance |

↓ ENTER

| | |
|---|---|
| * Cutter *<br>End | 50 |

## *5.9.4. Head Up/Down Endurance Menu*

This menu performs endurance running for the head up/down operation.
You can perform the capping operation according to your desired settings. The available settings are shown below.

| Setup item | Description | Parameters | Remarks |
|---|---|---|---|
| Waiting time | Set the waiting time after one cycle of endurance running | 10 | Unit: second |
| Number of endurance running cycles | Set the number of endurance running cycles | -1 to 10000 | |

Notes :

- If the number of endurance running cycles is set to -1, the units continuously repeat endurance running until a key input is given from the operation panel.
- The maximum counter value for endurance running cycles is 99999999 (up to 8-digit number). If the number of cycles exceeds the maximum value, the counter is reset to 0.
- The waiting time is not modifiable.

| | | |
|---|---|---|
| * LifeCount *<br>Count | -1 → 10000 +<br>50 - | Number of endurance running cycles |

↓ ENTER

| | | |
|---|---|---|
| * Head U/D *<br>Time Wait (sec) | 10 | Check wait time |

↓ ENTER or CANCEL

| | | |
|---|---|---|
| * Head U/D *<br>Count | 5 | Perform endurance running |

↓ ENTER or CANCEL

| | |
|---|---|
| * Head U/D *<br>End | 50 |

## 5.9.5. Head Lock Endurance menu

Test endurance of head lock.
In the Head Lock Endurance menu, you can perform head lock operation according to the set items.

Notes :

Refer to "Head Up/Down Endurance Menu"
The wait time for head lock endurance is set to 10 seconds.

| | | |
|---|---|---|
| * Head lock * | | |
| Wiper U/D | Yes/No +<br>Yes - | Wiper up and down |

↓ ENTER

| | | |
|---|---|---|
| * LifeCount * | | |
| Count | -1 → 10000 +<br>50 - | Number of endurance running cycles |

↓ ENTER

| | | |
|---|---|---|
| * Head Lock * | | |
| Time Wait (sec) | 10 | Check wait time |

↓ ENTER to perform endurance

| | | |
|---|---|---|
| * Head Lock * | | |
| Count | 5 | Perform endurance running |

↓ End

| | |
|---|---|
| * Head Lock * | |
| End | 50 |

## *5.9.6. Pump Endurance menu*

This menu performs endurance running for the pump.
In the Pump Endurance menu, you can perform the pump motor assembly endurance operation according to the settings.
The available settings are shown below.

| Setup item | Description | Parameters | Remarks |
|---|---|---|---|
| Operation speed | Sets the operation speed of the pump motor assembly. | High/Normal/Low | |
| Number of endurance running cycles | Set the number of endurance running cycles | -1 to 10000 | |

Notes :

- If the number of endurance running cycles is set to -1, the units continuously repeat endurance running until a key input is given from the operation panel.
- The maximum counter value for endurance running cycles is 99999999 (up to 8-digit number). If the number of cycles exceeds the maximum value, the counter is reset to 0.

F1 → / F3 →

```
* Aging pump *
High                    Normal
Low
```

← F2

↓ Select speed (high)

```
* LifeCount *
Count          -1 → 10000 +
                        50 -
```

Number of endurance running cycles

↓ ENTER

```
* High *
Count                   5
```

Perform endurance running

↓ ENTER or CANCEL

```
* High *
End                    50
```

## 5.9.7. Lever Motor Endurance Menu

This menu performs endurance running for the lever motor.
You can drive the lever motor according to your desired settings. The available settings are shown below.

| Setup item | Description | Parameters | Remarks |
|---|---|---|---|
| Number of endurance running cycles | Set the number of endurance running cycles | -1 to 10000 | |

Notes :

- If the number of endurance running cycles is set to -1, the units continuously repeat endurance running until a key input is given from the operation panel.
- The maximum counter value for endurance running cycles is 99999999 (up to 8-digit number). If the number of cycles exceeds the maximum value, the counter is reset to 0.

| * LifeCount * | | |
|---|---|---|
| Count | -1 → 10000 +<br>50 - | Number of endurance running cycles |

↓ ENTER

| * LeverMotor * | | |
|---|---|---|
| Count | 5 | Perform endurance running |

↓ ENTER or CANCEL

| * LeverMotor * | |
|---|---|
| End | 50 |

## *5.9.8. Sequential Printing Endurance Menu*

This menu performs endurance running for the printer heads.
You can operate the printer heads according to your desired settings. The available settings are shown below.

| Setup item | Description | Parameters | Remarks |
|---|---|---|---|
| Printing mode | Set printing mode. | MODE 1, MODE 2, MODE 3, MODE 5, MODE 6, MODE 7 | |
| Media Cut | Sets whether to cut media each time one printing is printed out or not. | Yes, No | |
| Number of endurance running cycles | Set the number of endurance running cycles | -1 to 10000 | |

Notes :

- If the number of endurance running cycles is set to -1, the units continuously repeat endurance running until a key input is given from the operation panel.
- The maximum counter value for endurance running cycles is 99999999 (up to 8-digit number). If the number of cycles exceeds the maximum value, the counter is reset to 0.

F1 → | * Print Mode * | MODE2 ← F2
F3 → | MODE1 | MODE3 | MODE5 ← F4 | (1/2)

F1 → | * Print Mode * | MODE6 | MODE7 ← F2 | (2/2)

↓ Select mode

| * Cut * | Yes/No + | Yes - |
|---|---|---|
| Cut | | |

↓ ENTER

| * Nozzle * | -1 → 10000 + | 50 - | Number of endurance running cycles |
|---|---|---|---|
| Count | | | |

↓ ENTER

| * Nozzle * | |
|---|---|
| Count | 5 |

Perform endurance running

↓ ENTER or CANCEL

| * Nozzle * | |
|---|---|
| End | 50 |

## *5.9.9. General Endurance Menu*

This menu performs the general endurance running.
You can operate various driving systems according to your desired settings.
The available settings are shown below.

| Setup item | Description | Parameters | Remarks |
|---|---|---|---|
| Operation speed (CW, CCW) | Sets carriage operation speed (CW and CCW). | 240/300 | Unit: cps |
| Media feed amount | Set the media feed amount per cycle | 0 to 100 | Unit: mm |
| Number of endurance running cycles | Set the number of endurance running cycles | -1 to 10000 | |

Notes :

- If the number of endurance running cycles is set to -1, the units continuously repeat endurance running until a key input is given from the operation panel.
- The maximum counter value for endurance running cycles is 99999999 (up to 8-digit number). If the number of cycles exceeds the maximum value, the counter is reset to 0.

| | | |
|---|---|---|
| * Speed CW *<br>Speed | 240 / 300 +<br>240 cps - | Speed (CW) |

↓ ENTER

| | | |
|---|---|---|
| * Speed CCW *<br>Speed | 240 / 300 +<br>240 cps - | Speed (CCW) |

↓ ENTER

| | | |
|---|---|---|
| * Feed Amount * | 0 – 100.0 mm +<br>0.1 mm - | Media feed amount |

↓ ENTER

| | | |
|---|---|---|
| * Life Count *<br>Count | -1 → 10000 +<br>50 - | Number of total endurance running cycles |

↓ ENTER

| * Total Life * | | |
|---|---|---|
| Count | 5 | Perform endurance running |

↓ ENTER or CANCEL

| * Total Life * | |
|---|---|
| End | 50 |

## 5.9.10. Endurance Running Check Menu

In this menu, you can confirm the number of endurance running cycles that have been already finished.
The number of endurance running cycles is stored in NVRAM in the system. Therefore, even if a serious error occurs during endurance running, you can confirm the number of finished cycles just before the occurrence of the serious error.

| | | |
|---|---|---|
| * Check * | | |
| CR Motor | 50 | Number of endurance running cycles (CR Motor) |
| PF Motor | 0 | Number of endurance running cycles (PF Motor) |
| | (1/5) | |

| | | |
|---|---|---|
| * Check * | | |
| Cutter | 33 | Number of endurance running cycles (Cutter) |
| Head U/D | 55 | Number of endurance running cycles (Head up/down) |
| | (2/5) | |

| | | |
|---|---|---|
| * Check * | | |
| Head lock | 77 | Number of endurance running cycles (head lock) |
| Wiper | 77 | Number of endurance running cycles (wiper) |
| | (3/5) | |

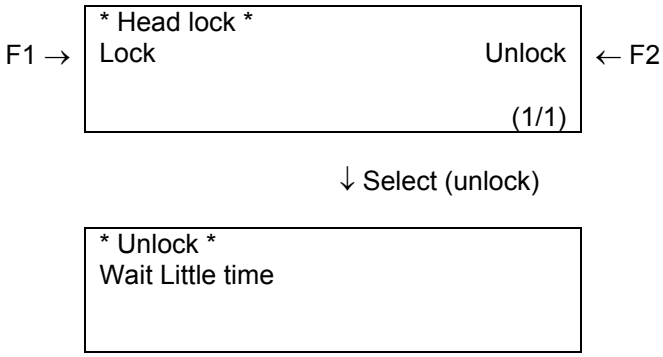
| | | |
|---|---|---|
| * Check * | | |
| Pump | 77 | Number of endurance running cycles (pump mot) |
| Lever Motor | 77 | Number of endurance running cycles (sequential Printing) |
| | (4/5) | |

| | | |
|---|---|---|
| * Check * | | |
| Nozzle | 77 | |
| Total Life | 88 | Number of endurance running cycles (All) |
| | (5/5) | |

# 5.10. HEAD LOCK MENU

Lock and unlock the head lock.
The following items are in the head lock menu.

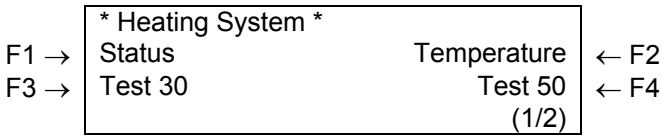
- Lock: Locks the head.
- Unlock: Releases the head lock.

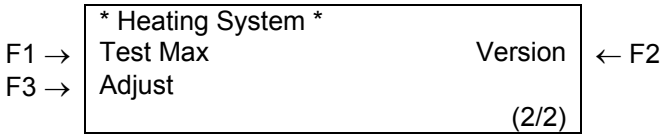


# 5.11. HEATER SYSTEM MENU

This section describes the heater system menu.
This menu is used to evaluate the heating elements of the printer.

| Initialization item | Description | Refer to |
|---|---|---|
| Status | This menu displays the status of the heating system. | → Heater Status Menu |
| Temperature | This menu displays the real temperature of the heating elements. | → Heater Temperature Menu |
| Test 30 | This menu heats the temperature up to 30°C. | → Heater Test 30 Menu |
| Test 50 | This menu heats the temperature up to 50°C. | → Heater Test 50 Menu |
| Test Max | This menu heats the temperature up to the maximum temperature. | → Heater Test Max Menu |
| Version | This menu displays the version of the control heater board. | → Heater Version Menu |
| Adjust | For calibration of the heaters.<br>For future use only! | → Heater Adjust Menu |



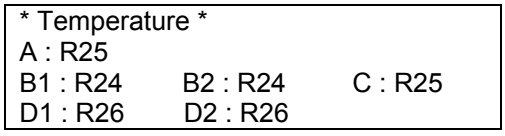




## 5.11.1. Heater Status Menu

This menu displays the status of the heating system.

## 5.11.2. Heater Temperature Menu

This menu displays the real temperature of the heating elements.



## 5.11.3. Heater Test 30 Menu

This menu heats the temperature up to 30°C.

```
* Test 30 *
Sending to heat system
```

The display will mention de current temperature. You can follow the heating of the heater elements on the display up to 30°C.

```
* Temperature *
A : R30
B1 : R30      B2 : R30      C : R31
D1 : R31      D2 : R31
```

## 5.11.4. Heater Test 50 Menu

This menu heats the temperature up to 50°C.

```
* Test 50 *
Sending to heat system
```

The display will mention de current temperature. You can follow the heating of the heater elements on the display up to 30°C.

```
* Temperature *
A : R50
B1 : R50      B2 : R50      C : R51
D1 : R50      D2 : R50
```

## 5.11.5. Heater Test Max Menu

This menu heats the temperature up to maximum temperature.

```
* Test MAx *
Sending to heat system
```

The display will mention de current temperature. You can follow the heating of the heater elements on the display up to 30°C.

```
* Temperature *
A : R50
B1 : R70      B2 : R70      C : R70
D1 : R50      D2 : R50
```

### *5.11.6. Heater Version Menu*

This menu displays the version of the control heater board.

```
* Version *
Ver = 2.03
```

### *5.11.7. Heater Adjust Menu*

Notes :

- With this menu you can calibrate the heaters. Please note that this function is for future use only.

## 5.12. ECO PREPARE MENU

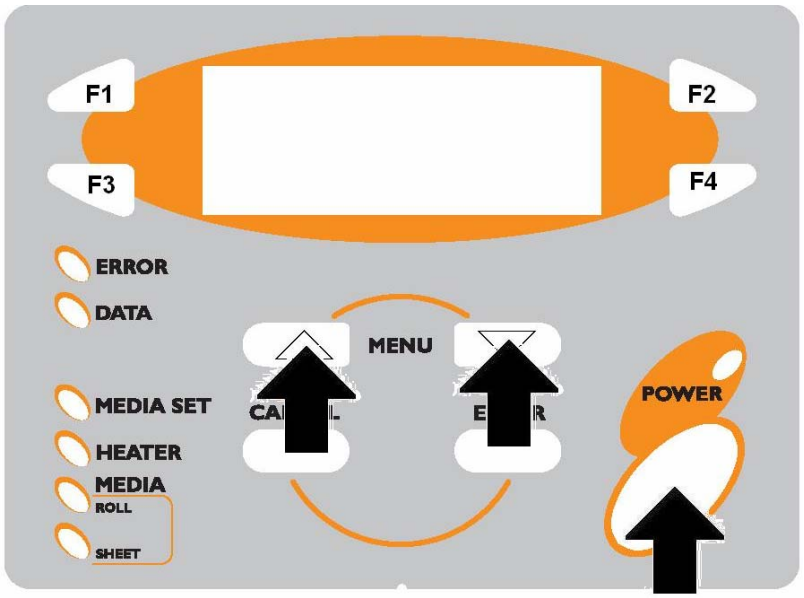
Loading ink for the first time. Please refer to the User's Guide.

# 5.13. MACHINE SIZE SELECT MENU

This section describes the select menu of the machine size.
Used when the Mainboard is exchanged, etc.

**Step 1 :** If the system is in the operation mode or the self-diagnosis menu mode, press the [POWER] key to power off the unit.

**Step 2 :** Press the [POWER] key while simultaneously pressing and holding the [MENU ↑] key and the [MENU ↓] key.




**Step 3 :** Select the machine size.

F1 → F3 →

| * MachinSize * | |
|---|---|
| 50inch | 64inch |
| 87inch | |
| - 64inch - | (1/1) |

← F2

↓ Select item

Select Finish !
Please re-starting

**Step 4 :** Power OFF the unit.

# 6. MAINTENANCE MODE

## 6.1. INTRODUCTION

This chapter provides information on the maintenance mode.
The maintenance mode provides the user with functions of displaying and initializing the life counters.
It is used in the manufacturing process, adjustment and maintenance.
The maintenance mode is implemented in the system firmware. All functions are available from the operation panel.

Notes :

- Refer to “Operation Panel ".

## 6.2. OPERATING MAINTENANCE MODE

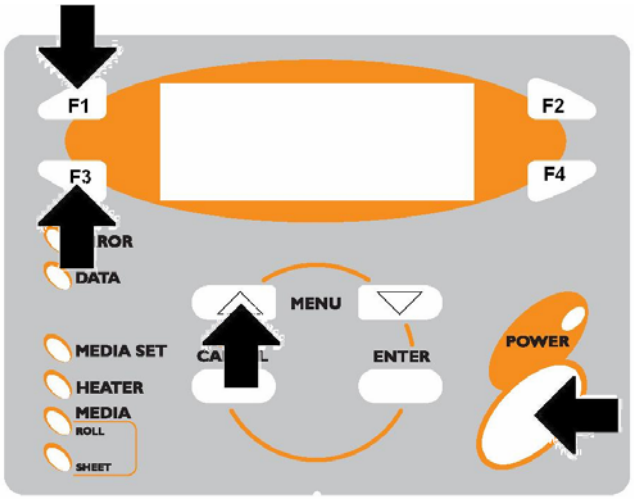
This section explains how to start up and operate the maintenance mode and provides the list of available diagnosis items.

### *6.2.1. Starting Up Maintenance Mode*

To use the maintenance mode, you should first call up the maintenance menu on the operation panel.
The maintenance menu is completely independent of the normal operation mode and setup menu display mode. To call up the maintenance menu, follow the steps below.

**Step 1 :** If the system is in the operation mode or the setup menu mode, press the [POWER] key.

**Step 2 :** Press and hold the [F1] key, [F3] key and [MENU ↑] key simultaneously. While holding down these keys, press the [POWER] key.
The system will enter the maintenance mode and display the maintenance menu.



## *6.2.2. Operating Maintenance Mode*

For operating the maintenance mode, refer to "Operations in Self-Diagnosis Mode".

# 6.3. MAINTENANCE MENU

The maintenance menu includes the following diagnosis items.

| Initialization item | Description | Refer to |
|---|---|---|
| Counter Display Menu | This menu displays the life counters. | Counter Display Menu |
| Counter Initialization Menu | Initializes the service life counter. | Counter Initialization Menu |
| MAC address write enable menu | Performs network MAC address writing. | MAC address write enable menu |

F1 → F3 →

```
* Counter *
Indication          InitMenu
MACaddress
```

← F2

Notes :

- The MAC address write enable menu is added from Farm Ver. 1.08.

## *6.3.1. Counter Display Menu*

This menu displays the life counters. It consists of the following diagnosis items.

| Diagnosis item | Description |
|---|---|
| Rest ink 1 | Displays ink consumption counter (1). |
| Rest ink 2 | Displays ink consumption counter (2). |
| Rest ink 3 | Displays ink consumption counter (3). |
| Rest ink 4 | Displays ink consumption counter (4). |
| Rest ink 5 | Displays ink consumption counter (5). |
| Rest ink 6 | Displays ink consumption counter (6). |
| Rest ink 7 | Displays ink consumption counter (7). |
| Rest ink 8 | Displays ink consumption counter (8). |
| Cutter service life | Displays the cutter service life counter. |
| Number of prints | Displays the counter for the total number of prints. |
| Waste ink | Displays the service life counter for the waste liquid tank (right). |
| Cleaner | Displays the cleaning unit life counter. |
| CR motor | Displays the CR motor service life counter. |
| PF motor | Displays the PF motor service life counter. |
| Head 1 A | Displays the service life counter for nozzle A of head unit 1. |
| Head 1 B | Displays the service life counter for nozzle B of head unit 1. |
| Head 2 A | Displays the service life counter for nozzle A of head unit 2. |
| Head 2 B | Displays the service life counter for nozzle B of head unit 2. |
| Head 3 A | Displays the service life counter for nozzle A of head unit 3. |
| Head 3 B | Displays the service life counter for nozzle B of head unit 3. |
| Head 4 A | Displays the service life counter for nozzle A of head unit 4. |
| Head 4 B | Displays the service life counter for nozzle B of head unit 4. |

Notes :

- All life counters are displayed in decimal number.
- For 87-inch specifications, the head 5A, 5B, 6A, 6B, 7A, 7B, 8A, 8B are added.

| * Counter Display * | |
|---|---|
| Ink remain 1 | 00000000 |
| Ink remain 2 | 00000000 |
| | (1/11) |

| * Counter Display * | |
|---|---|
| Ink remain 3 | 00000000 |
| Ink remain 4 | 00000000 |
| | (2/11) |

| * Counter Display * | |
|---|---|
| Ink remain 5 | 00000000 |
| Ink remain 6 | 00000000 |
| | (3/11) |

| * Counter Display * | |
|---|---|
| Ink remain 7 | 00000000 |
| Ink remain 8 | 00000000 |
| | (4/11) |

| * Counter Display * | |
|---|---|
| CutterLife | 00000000 |
| PrintNumber | 00000000 |
| | (5/11) |

| * Counter Display * | |
|---|---|
| WasteInk | 00000000 |
| Cleaner | 00000000 |
| | (6/11) |

| * Counter Display * | |
|---|---|
| CR Motor | 00000000Mdot |
| PF Motor | 00000000Mdot |
| | (7/11) |

| * Counter Display * | |
|---|---|
| Head 1A | 00000000Mdot |
| Head 1B | 00000000Mdot |
| | (8/11) |

| * Counter Display * | |
|---|---|
| Head 2A | 00000000Mdot |
| Head 2B | 00000000Mdot |
| | (9/11) |

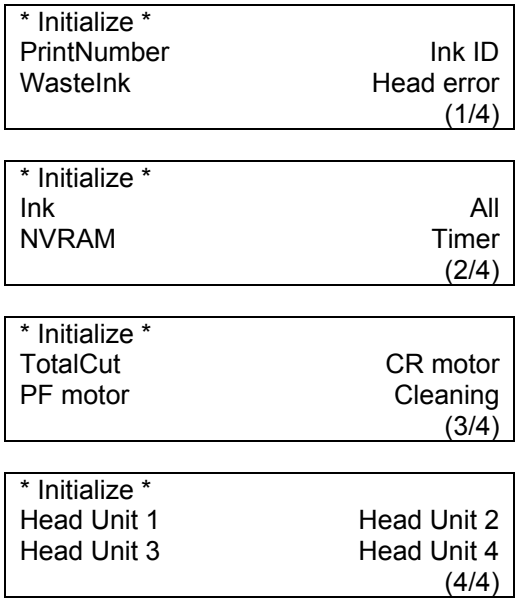
| * Counter Display * | |
|---|---|
| Head 3A | 00000000Mdot |
| Head 3B | 00000000Mdot |
| | (10/11) |

| * Counter Display * | |
|---|---|
| Head 4A | 00000000Mdot |
| Head 4B | 00000000Mdot |
| | (11/11) |

## 6.3.2. Counter Initialization Menu

This menu initializes the life counters. The parameters that can be initialized in this menu are as follows.

| Diagnosis item | Description |
|---|---|
| Number of prints initialization | Initializes the total number of printing counter. |
| Ink initialization | Initializes the ink capacity counter. |
| Waste ink initialization | Initializes the waste fluid tank service life counter. |
| Head error reset | Resets critical trouble errors due to over-current flowing the head. |
| Ink ID mask initialization | Resets the ink ID mask. |
| Total initialization | Initializes the service life counter. |
| NVRAM initialization | Initializes NVRAM. |
| Timer initialization | Initializes the timer. |
| Cutter initialization | Initializes the cutter cumulative counter. |
| CR motor initialization | Initializes the CR motor service life counter. |
| PF motor initialization | Initializes the PF motor service life counter. |
| Cleaning initialization | Initializes the cleaning wiper service life counter. |
| Head unit 1 initialization | Initializes the head 1 nozzle service life counter. |
| Head unit 2 initialization | Initializes the head 2 nozzle service life counter. |
| Head unit 3 initialization | Initializes the head 3 nozzle service life counter. |
| Head unit 4 initialization | Initializes the head 4 nozzle service life counter. |



## *6.3.3. MAC address write enable menu*

It could happen that the computer cannot make connection with the Falcon II Outdoor printer. If this is the case, the MAC address of the Falcon II Outdoor printer has probably been set to zero or incorrect.

To insert the MAC address into the Falcon II Outdoor printer, please follow the instructions mentioned below.

Notes :

- For the MAC address, a unique number is assigned for each unit. Do not use this function except when intending to recover following deletion of the MAC address.
- Please note that this procedure is only available onto the Falcon II Outdoor printers with following firmware version or higher.
  - Falcon II Outdoor : V2.00

### *6.3.3.1. Request correct MAC address*

**Step 1 :** Remove the Right Cover.

**Step 2 :** Remove the Ethernet Board Cover.

**Step 3 :** Onto the installed card you can see a sticker with a 'FM0 number'.

Notes :

Write down this number 'FM0 xxxxxx'. Important are the 6 digits 'x'.

**Step 4 :** Based on this number Mutoh Europe's service department can provide you the correct MAC address for your printer.

**Step 5 :** Reinstall the covers.

### *6.3.3.2. Insert the MAC address into the printer*

**Step 1 :** Power on the unit in a special mode. Press the [POWER] key to power ON the unit, while simultaneously holding the [F1], [F3] and [Menu ↑] key.

**Step 2 :** The unit will start up in special mode. Following message will appear on the display.

```
          * Counter *
          Indication              InitMenu
F3 →      MACaddress
```

**Step 3 :** Press the [F3] key to select the option ‘MAC Address’. Following message will appear on the display.

```
* MAC address *
Input Password
```

**Step 4 :** Press the [F2] key.

**Step 5 :** Press the [F3] key.

**Step 6 :** Press the [F1] key.

**Step 7 :** Press the [F4] key.

**Step 8 :** The password has been inserted. Use the [F1], [F2], [F3] and [F4] key to insert the MAC address.

**Step 9 :** Press the [ENTER] key to confirm.

**Step 10 :** Press the [POWER] key to power OFF the unit.

# 7. ADJUSTMENTS

## 7.1. INTRODUCTION

Adjustments and adjustment procedures required when replacing parts are explained in this chapter.

Notes :

- Refer to “Jig and tool list ".

# 7.2. ADJUSTMENT

The adjustments required when replacing parts are explained below.
When adjusting or replacing maintenance parts shown in the table below, a printing adjustment is required using the auto-diagnostic function on the printer. Refer to the table below while making adjustments.

| Replaced or adjusted part | Adjustment order | Adjustment | Refer to |
|---|---|---|---|
| Print head | 1 | Head rank input (including initial filling) | → Head rank input menu |
| | 2 | Head nozzle check | → Head Nozzle Check Menu |
| | 3 | Head angle check | → Head Slant Check Menu |
| | 4 | Head precision adjustment | → Head precision adjustment |
| | 5 | Repeatability adjustment | → Repeatability Adjustment Menu |
| | 6 | CW adjustment | → CW Adjustment Menu |
| | 7 | Test Print | → Test print menu |
| | 8 | Head unit lifespan count reset | → Parameter Initialization Menu |
| Mainboard assembly | 1 | Parameter backup | → Parameter backup |
| | 2 | Firmware installation | → Firmware installation |
| | 3 | Machine size select | → Machine size select menu |
| | 4 | Backup parameter installation | → Backup parameter installation procedure |
| | 5 | Media sensor sensitivity adjustment | → Media sensor sensitivity adjustment |
| | 6 | Head rank input | → Head rank input menu |
| | 7 | Head nozzle check | → Head Nozzle Check Menu |
| | 8 | Head angle check | → Head Slant Check Menu |
| | 9 | Repeatability adjustment | → Repeatability Adjustment Menu |
| | 10 | CW adjustment | → CW Adjustment Menu |

| | | | |
|---|---|---|---|
| | 11 | Band feed correction | → Band Feed Correction Menu (X Length) |
| | 12 | Top and bottom adjustment | → Top & bottom adjustment menu |
| | 13 | Rear sensor position adjustment | → P_REAR sensor position adjustment menu |
| | 14 | Test Print | → Test print menu |
| CR motor assembly | 1 | CR deceleration belt tension adjustment | → Steel belt tension adjustment |
| | 2 | Repeatability adjustment | → Repeatability Adjustment Menu |
| | 3 | Top and bottom adjustment | → Top & bottom adjustment menu |
| | 4 | Test Print | → Test print menu |
| | 5 | Initializing CR motor history | → Parameter Initialization Menu |
| PF motor assembly | 1 | PF deceleration belt tension adjustment | → PF deceleration belt tension adjustment |
| | 2 | Band feed correction | → Band Feed Correction Menu (X Length) |
| | 3 | Top and bottom adjustment | → Top & bottom adjustment menu |
| | 4 | Rear sensor position adjustment | → P_REAR sensor position adjustment menu |
| | 5 | Test Print | → Test print menu |
| | 6 | Initializing PF motor history | → Parameter Initialization Menu |
| P_EDGE sensor assembly | 1 | Media sensor sensitivity adjustment | → Media sensor sensitivity adjustment |
| | 2 | Top and bottom adjustment | → Top & bottom adjustment menu |
| Cover sensor assembly | 1 | Cover sensor assembly position adjustment | → Cover sensor adjustment |
| PF_ENC assembly | 1 | PF_ENC inspection | → Encoder Menu |
| | 2 | Band feed correction | → Band Feed Correction Menu (X Length) |
| | 3 | Top and bottom adjustment | → Top & bottom adjustment menu |
| | 4 | Test Print | → Test print menu |
| Sub-platen | 1 | Cutter adjustment | → Cutter adjustment |
| | 2 | Cutter endurance operation check | → Cutter Endurance menu |
| T fence | 1 | CR encoder inspection | → Encoder Menu |
| | 2 | Repeatability adjustment | → Repeatability Adjustment Menu |
| | 3 | Top and bottom adjustment | → Top & bottom adjustment menu |
| | 4 | Test Print | → Test print menu |
| CR slave pulley | 1 | Steel belt tension adjustment | → Steel belt tension adjustment |
| Cutter holder | 1 | Cutter adjustment | → Cutter adjustment |

| | | | |
|---|---|---|---|
| assembly | 2 | Cutter endurance operation check | → Cutter Endurance menu |
| Carriage assembly | 1 | Head height adjustment | → Head height adjustment |
| | 2 | Media sensor sensitivity adjustment | → Media sensor sensitivity adjustment |
| | 3 | Continuous printing endurance operation check | → Head Nozzle Check Menu<br>→ Sequential Printing Endurance Menu |
| | 4 | Head nozzle check | → Head Nozzle Check Menu |
| | 5 | Head angle check | → Head Slant Check Menu |
| | 6 | Head precision adjustment | → Head precision adjustment |
| | 7 | Repeatability adjustment | → Repeatability adjustment Menu |
| | 8 | CW adjustment | → Repeatability Adjustment Menu |
| | 9 | Top and bottom adjustment | → P_REAR sensor position adjustment menu |
| | 10 | Test Print | → Test print menu |

# 7.3. PARAMETER BACKUP

This chapter explains the different types of parameter backup methods.
The different backup parameters related to the operation of the printer are recorded on the NVRAM (Flash-ROM or EEPROM) installed on the Mainboard.
There are the following types of backup parameters.

- Panel setting values
- Mechanism adjustment values
- Mainboard adjustment values

Notes :

- For the backup parameter, the Mainboard adjustment values cannot be changed or deleted.

If it is necessary to replace the Mainboard while performing maintenance work, make a parameter backup. You can shorten some of the adjustment procedures by matching the printer mechanism with the new Mainboard.

**Caution :**

Before making a parameter backup, make sure that the power source to the printer is off. If the operation is performed with the power source on, the Mainboard could be damaged and the data may not be installed correctly.

## *7.3.1. Tools required for work*

The following tools are required for the parameter backup procedure.

- Flash memory card

Notes :

- Refer to 'Jig and tool list'.
- Use the memory card written in "Procedure for creating backup parameters" for parameter backup of the unit only.

## *7.3.2. Procedure for creating backup parameters*

This section explains the procedure for recording backup parameters from the Mainboard assembly onto a memory card. Use the following procedure to create backup parameters.

**Important :**

- **Before replacing parts, be sure to perform the following operations.**
  - **Turn the machine power OFF.**
  - **Remove the product's electrical plug from the socket. Otherwise, you may suffer electric shock or the machine's electric circuits may be damaged.**
- **Disconnect all cables from the machine. Not doing so could cause damage to the printer.**

**Step 1 :** Remove the memory cover.

**Step 2 :** Install the memory card for parameter backup into the memory card connector slot (J104) on the mainboard assembly.

Notes :

- Install the memory card so that its front is toward the inside of the printer.

**Step 3 :** Turn the power to the printer on.
- After all of the lamps on the operation panel light up, the LED display on the panel displays "PRINTER→CARD".

**Step 4 :** Press the [ENTER] key on the operation panel.
- The LED display on the operation panel displays "P→C Started".
- Backup parameter creation begins.

**Step 5 :** If the backup parameter has been created correctly, "P→C Completed" is displayed on the operation panel.

**Step 6 :** Turn off the power source to the printer.

**Step 7 :** Remove the memory card for parameter backup.

Notes :

- If you do not have backup memory card, output "Adj. Variable" in "Sample Printing Menu". Required parameter is output.
- For the panel setting value, output "Setup" in the Operation Manual. Maintenance history is not printed.

## *7.3.3. Backup parameter installation procedure*

The following is the procedure for installing the backup parameter from the memory card into the new Mainboard assembly. Use the following procedure to install backup parameters.

### *(1) When using a flash memory card*

**Step 1 :** Install the memory card for the backup into the memory card connector slot for the new Mainboard assembly.

Notes :

- Install the memory card so that its front is toward the inside of the printer.

**Step 2 :** Turn the power to the printer on.
- After all of the lamps on the operation panel come on, the LED display on the panel displays "PRINTER→CARD".

**Step 3 :** Press either the [MENU ↑] key or [MENU ↓] key on the operation panel.
- "CARD→PRINTER" is displayed on the LED display on the operation panel.

**Step 4 :** Press the [ENTER] key on the operation panel.
- The LED display on the operation panel displays "C→P Started".
- Backup parameter creation begins.

**Step 5 :** If the backup parameter has been created correctly, "C→P Completed" is displayed on the operation panel.

**Step 6 :** Turn off the power source to the printer.

**Step 7 :** Remove the memory card for parameter backup.

**Step 8 :** Reinstall the memory cover

### *(2) When not using a flash memory card*

The settings should be input by the panel.
Input following the procedures below.

**Step 1 :** Install the firmware according to "Firmware installation".

**Step 2 :** Follow the instructions in "Machine size select menu" to select the machine size.

**Step 3 :** Initialize NVRAM according to "Counter Initialization Menu".

**Step 4 :** Follow the instructions in "Parameter Update Menu" and refer to the printed adjustment variable to enter following setting value.

- Head voltage
- Printing position alignment (Bi-D)
- CW adjustment
- Media feed distance
- Mechanical parameter (Top margin, Bottom margin, Side margin, P_REAR sensor position)
- Ink parameter (Initial ink charge flag)
- Ink ID mask
- Serial number

Notes :

- Maintenance history cannot be input.

# 7.4. FIRMWARE INSTALLATION

The procedure for installing firmware is explained below.
The programs (firmware) that control the operation of the printer are recorded on the NVRAM (Flash-ROM) installed on the Mainboard.
Install firmware when performing the following maintenance operations.

- When replacing the Mainboard assembly
- When upgrading firmware

Notes :

- When PC is used, the firmware cannot be installed via PCI_Linux board. Install via Centronics.

**Caution :**

Before installing firmware, be sure that the power to the printer is turned off.
Performing these operations with the power on could result in damage to the Mainboard assembly or cause the data to not be installed correctly.

## *7.4.1. Tools required for work*

The following tools are required to install firmware.
Flash memory card or compatible computer

Notes :

- Refer to “Jig and Tool list”.

## *7.4.2. Installation procedure*

The procedure for installing firmware is explained below.
Use the following procedure to install firmware.

**Important :**

- **Before replacing parts, be sure to perform following operations.**
  - **Turn the machine power OFF.**
  - **Remove the product's electrical plug from the socket. Otherwise, you may suffer electric shock or the machine’s electric circuits may be damaged.**
- **Disconnect all cables from the machine. Not doing so could cause damage to the printer.**

### *(1) When using a flash memory card*

**Step 1 :** Remove the memory cover.

**Step 2 :** Install the memory card for the installation of firmware into the memory card connector slot (J104) of the Mainboard assembly.

Notes :

- Install the memory card so that its front points towards the inside of the printer.

**Step 3 :** Turn the power of the printer ON.

**Step 4 :** Firmware installation starts.

**Step 5 :** Check if the buzzer sounded and whether the firmware was installed correctly.

**Step 6 :** Turn off the power source to the printer.

**Step 7 :** Remove the memory card for firmware installation.

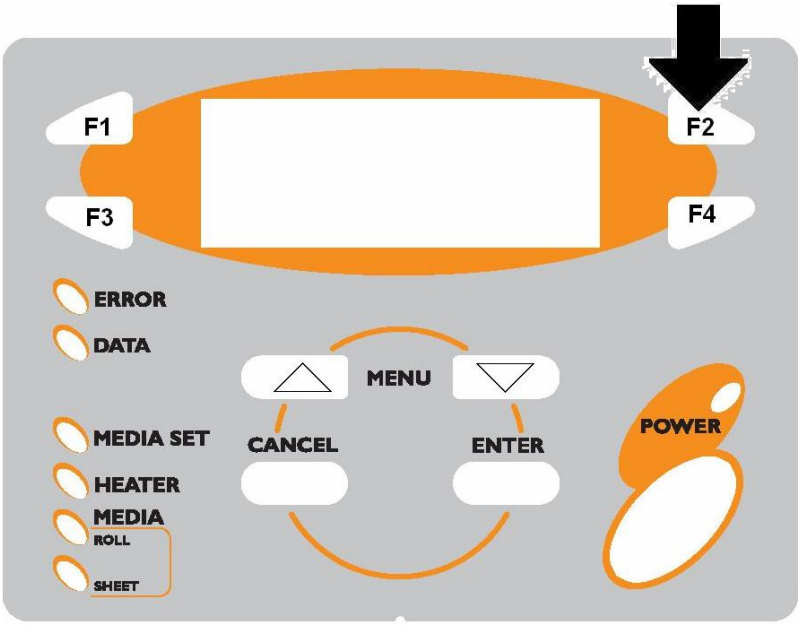
**Step 8 :** Reinstall the memory cover.

### *(2) When using a computer*

**Step 1 :** Using a printer cable, connect the PC to the printer.

**Step 2 :** Turn the power of the printer ON.
- All lamps will flash for an instant.

**Step 3 :** Press the [F2] key on the operation panel within 1 second.
- The message "Ready to load" is displayed and the firmware install mode takes effect.




**Step 4 :** Send new firmware data by MS-DOS copy command etc. (e.g. "COPY /B rh2.04.jfl LPT1")

Firmware installation will take about 60 seconds. The following messages will appear in order on the LED display on the operation panel during installation.

- "Loading"
- "Erasing"
- "Copying"
- "Comparing"
- "End"

**Step 5 :** Check if the buzzer sounded and whether the firmware was installed correctly.

**Step 6 :** Power the unit OFF.

**Important :**

**After installation of the firmware onto the Falcon II Outdoor 4 heater, you must upgrade the heater system board.**

## *(3) Updating the heater system board (4 heater printers ONLY!).*

To update the heater system board of a Falcon II Outdoor 4 heater printer, please follow the instructions mentioned below.

**Important :**

- **Before updating the heater system board, make sure you already installed the firmware into the Falcon II Outdoor 4 heater printer.**

**Step 1 :** Make sure the printer is OFF.

**Step 2 :** Press simultaneously the [CANCEL] and the [ENTER] key while turning the printer ON.

**Step 3 :** The display will mention the following message.

F2 →

```
* User Setting *
Rem Update
Ver Update
                (1/1)
```

**Step 4 :** Press the [F2] key.

**Step 5 :** The heater system board is now being updated. The display will mention the following messages.

- Erasing sectors
- Wait flash programming

**Step 6 :** At the end the display will mention the following message.

```
Card Update
     DO NOT POWER DOWN
        Version Installed
```

**Step 7 :** Press the [CANCEL] key.

**Step 8 :** Power OFF the unit.

**Step 9 :** Updating the heater system board is completed.

# 7.5. STEEL BELT TENSION ADJUSTMENT

The procedure for adjusting the steel belt tension is explained below.
This section explains the procedure for adjusting steel belt tension. When removing/installing the steel belt, adjust its tension.

## *7.5.1. Tools required for work*

The following tools are required when adjusting the tension of the steel belt.

- Tension gauge: max. 2.0 N (200 g)
- Steel belt tension attachment 2: for gauge diameter 2mm (0.08in.) or less

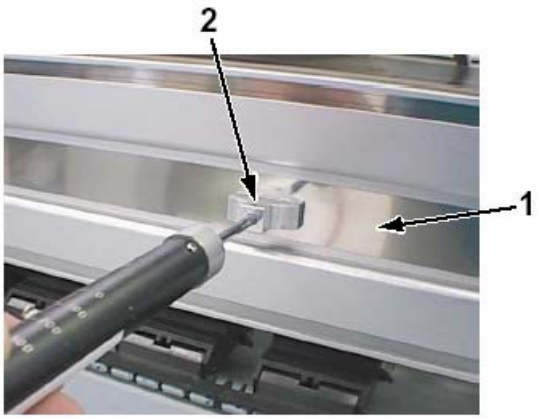
Notes :

- Refer to “jig and Tool list”.

## 7.5.2. Adjustment Procedure

Use the following procedure to adjust the tension of the steel belt.

**Step 1 :** Place the tension gauge at the center of the steel belt.



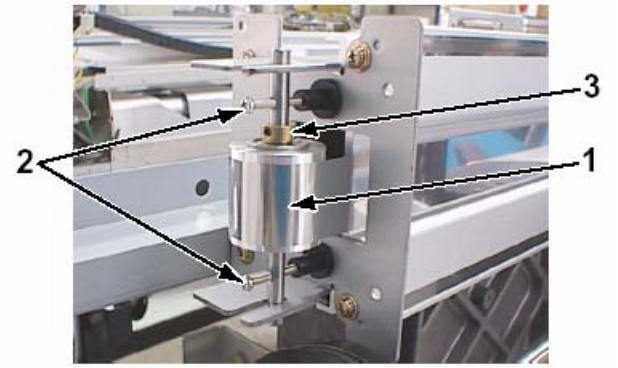

| | |
|---|---|
| 1 = steel belt | 2 = Tension gauge |

Notes :

The regulation values for the tension of the steel belt are shown below.

- 50 inch, 64 inch specifications: 1.0 N ± 0.1 N (100 g ± 10 g)
- 87 inch specifications: 0.9 N ± 0.1 N (90 g ± 10 g)

**Step 2 :** If the tension of the steel belt is not within the range of regulated values, adjust the steel belt tension screws.




| | |
|---|---|
| 1 = Steel belt | 2 = Steel belt tension screw |
| 3 = CR slave pulley | |

**Step 3 :** Move the CR cursor to the left and right once or twice. Adjust the CR driven pulley until the upper and lower margins are identical.

**Caution :**

If the tension is not equivalent across the entire belt, it could snap during operation.

# 7.6. PF DECELERATION BELT TENSION ADJUSTMENT

The procedure for adjusting the tension of the PF deceleration belt is explained below.
When removing the PF motor or removing/installing the PF deceleration belt, adjust the tension of the PF deceleration belt.

## *7.6.1. Tools required for work*

The following tools are required to adjust the tension of the PF deceleration belt.
Tension gauge: max. 50 N (5 kgf)

Notes :

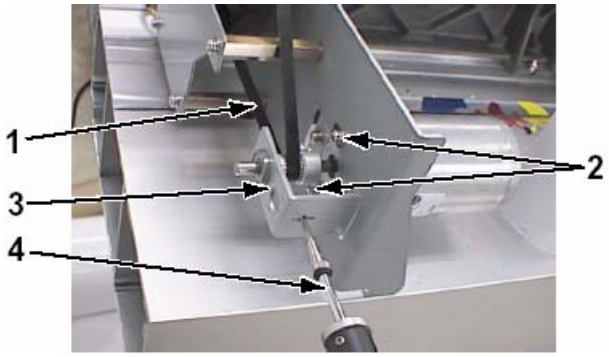
- Refer to “Jig and tool list”

## *7.6.2. Adjustment Procedure*

Use the following procedure to adjust the tension of the PF deceleration belt.

**Step 1 :** Loosen the 2 screws fixing the PF motor installation board.

**Step 2 :** Install the tension gauge on the PF motor installation board and pull it in the direction shown on the figure below.




| | |
|---|---|
| 1 = PF deceleration belt | 2 = Screws (M3x6) fixing the PF motor installation board |
| 3 = PF motor installation board | 4 = Tension gauge |

Notes :

- The regulated value of the tension for the PF deceleration belt is 34.32 N ±10 % (3,5 kgf ±10 %).

**Step 3 :** Tighten the 2 screws fixing the PF motor installation board.

# 7.7. HEAD PRECISION ADJUSTMENT

This section explains the procedure for adjusting the head angle.
When replacing the head assembly, use the following procedure to adjust the head angle and head forward/rear position.

Notes :

- When the 6-colour mode has been activated, heads in which a cleaning cartridge has been inserted will not spray. Consequently, these heads cannot be adjusted. Perform adjustments in all modes except for 6-colour mode.

## *7.7.1. Head angle adjustment*

**Step 1 :** Start the self-diagnostic function.

Notes :

- Refer to “Self-Diagnosis Function”

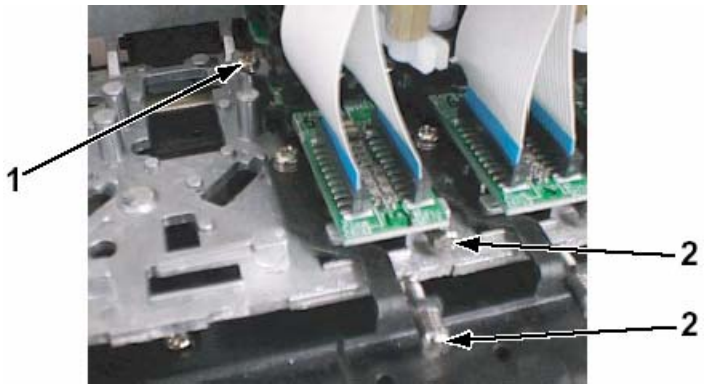
**Step 2 :** Select "Adj:HeadSlant".

**Step 3 :** Print "Slant" pattern.

Notes :

Printing pattern is printed with the head sequence shown below.
- 50, 64 inch model: 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B
- 87 inch model: 3A, 3B, 1A, 1B, 2A, 2B, 4A, 4B, 5A, 5B, 6A, 6B, 7A, 7B, 8A, 8B

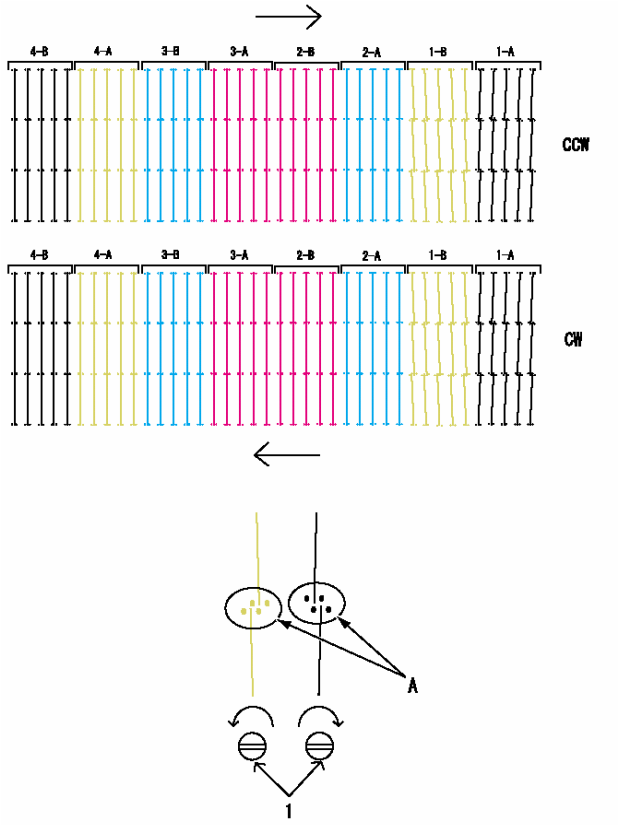
**Step 4 :** Loosen the screw fixing the head stationary plate.




| | |
|---|---|
| 1 = Screw (M2.5x5) fixing the head stationary plate | 2 = Angle adjustment screw |

**Step 5 :** Magnifying by the loupe, move the angle adjustment screw on the head to adjust the head angle until dotted line on printing A becomes straight.

**Step 6 :** If CW is aligned but CCW is not, make adjustments until amount of CW and CCW offset are identical.




1 = Angle adjustment screw

Notes :

- For 87-inch specifications, the head 5-A, 5-B, 6-A, 6-B, 7-A, 7-B, 8-A, 8-B are added.

**Step 7 :** Tighten the screw fixing the head stationary plate.

## *7.7.2. Front and back of head adjustment*

**Step 1 :** Start the self-diagnostic function.

Notes :

- Refer to “Self-Diagnosis Function".

**Step 2 :** Select "Adj:HeadSlant".

**Step 3 :** Print "F and B" pattern.

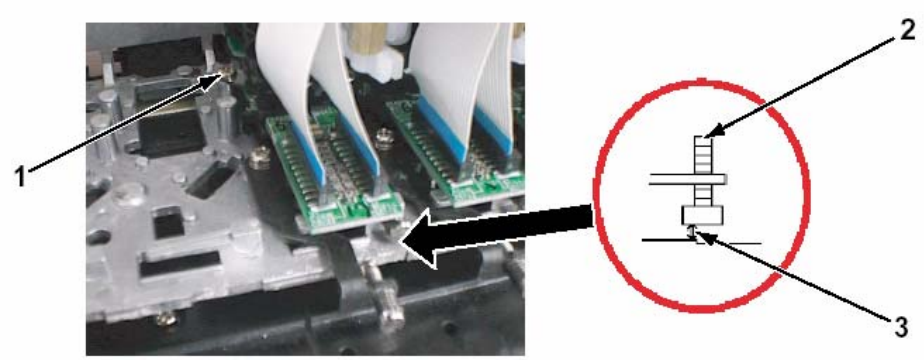
Notes :

- Before adjusting the head forward/backward, move the head fore/aft adjustment screw until item 3 in following figure reaches 0.5mm. If the adjustment has been made when the screw is too tight, forward/backward adjustment of heads may become misaligned.
- The reference head is the following.
  - 50, 64 inch spec: The first head.
  - 87 inch spec: The third head from the left.
- The three types of printing patterns are listed below:
  - 1st Line: Pattern used in order to adjust row A of heads 2, 3, and 4 using head 1 as a reference.
  - 2nd Line: In order to confirm the results of the adjustments performed on the 1st line, this pattern checks to see whether or not row B of heads 3, 2, and 1 has been adjusted using head 4 as a reference.
  - 3rd Line: Pattern which confirms that identical colour is configured at center of each nozzle in 4-colour double setting.
- Printing pattern is printed with the head sequence shown below:

  50: 64 inch
  - Line 1: 1A, 2A, 1A, 3A, 1A, 4A
  - Line 2: 1B, 2B, 1B, 3B, 1B, 4B
  - Line 3: 1A & 4B, 2A & 3B, 3A & 2B, 4A & 1B

  87 inch spec
  - Line 1: 3A, 1A, 3A, 2A, 3A, 4A, 3A, 5A, 3A, 6A, 3A, 7A, 3A, 8A
  - Line 2: 6B, 8B, 6B, 7B, 6B, 5B, 6B, 4B, 6B, 3B, 6B, 2B, 6B, 1B
  - Line 3: 1A & 8B, 2A & 7B, 3A & 6B, 4A & 5B, 5A & 4B, 6A & 3B, 7A & 2B, 8A & 1B

**Step 4 :** Loosen the screw fixing the head stationary plate.



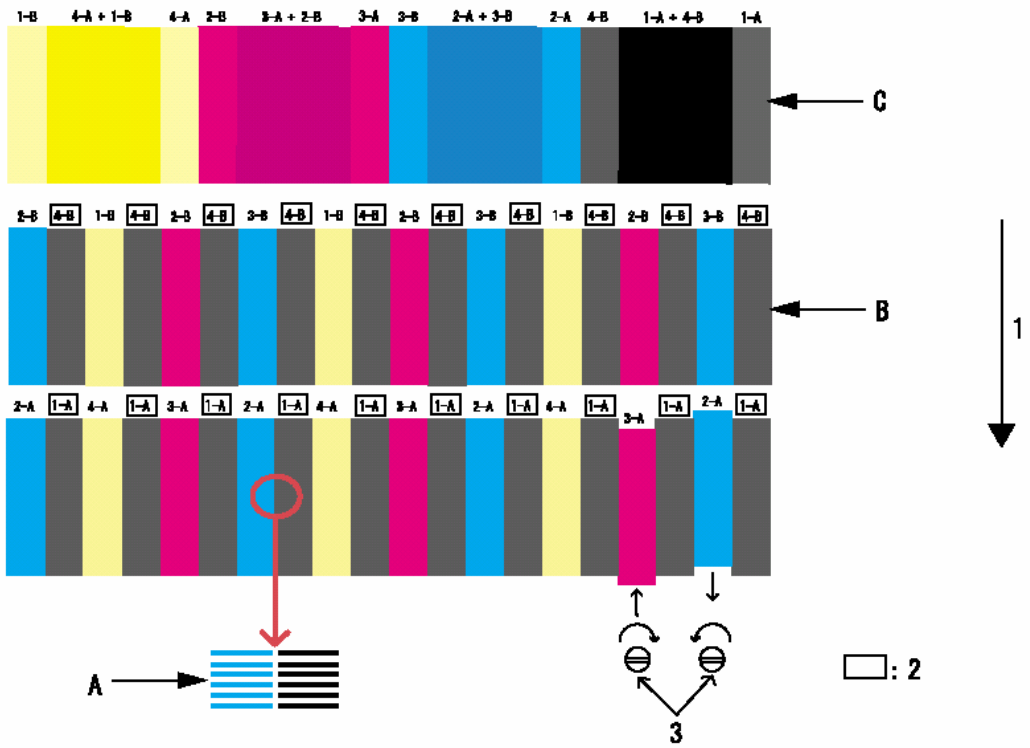

| | |
|---|---|
| 1 = Screw (M2.5x5) fixing the head stationary plate | 2 = Fore/Aft Adjustment Screws |
| 3 = 0.5 mm (0.02 in.) | |

**Step 5 :** Using the colour printed by the reference head as a guide, move the head forward/aft adjustment screw, adjusting the head forward/back position until each of the colour is straight.

**a.** Enlarge with magnifying glass. Adjust so that two colours converge on a perpendicular line. (See A in following figure.)

**b.** Confirm that row B adjustments have been made. (See B in following figure.)

**c.** Confirm that solids are properly printed. (See C in following figure.)

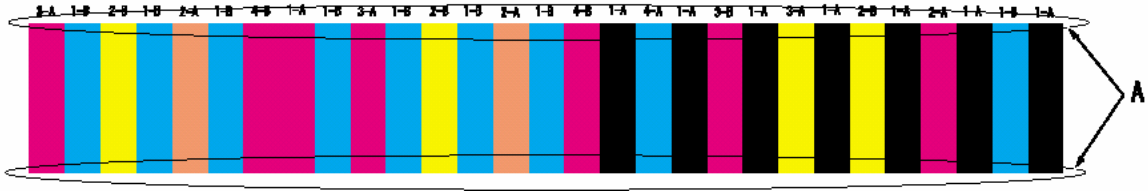



| | |
|---|---|
| 1 = Media feed direction | 2 = Reference head |
| 3 = Fore/Aft Adjustment Screws | |

Notes :

- For 87-inch specifications, the heads 5-A, 5-B, 6-A, 6-B, 7-A, 7-B, 8-A, 8-B are added.
- In the event that top/bottom margins do not match due to some property of head, adjust amount of top/bottom offset.

**Step 6 :** Print a check pattern so that section A of following diagram is a straight line.



Notes :

Confirmation patterns are printed in the following sequence:

- 50, 64 inch model: 1A, 1B, 1A, 2A, 1A, 2B, 1A, 3A, 1A, 3B, 1A, 4A, 1A, 4B, 1B, 2A, 1B, 2B, 1B, 3A, 1B, 3B, 1B, 4A, 1B, 4B, 2A, 2B, 2A, 3A, 2A, 3B, 2A, 4A, 2A, 4B, 2B, 3A, 2B, 3B, 2B, 4A, 2B, 4B, 3A, 3B, 3A, 4A, 3A, 4B, 3B, 4A, 3B, 4B, 4A, 4B
- 87 inch model: 1A, 1B, 1A, 2A, 1A, 2B, 1A, 3A, 1A, 3B, 1A, 4A, 1A, 4B, 1A, 5A, 1A, 5B, 1A, 6A, 1A, 6B, 1A, 7A, 1A, 7B, 1A, 8A, 1A, 8B, 1B, 2A, 1B, 2B, 1B, 3A, 1B, 3B, 1B, 4A, 1B, 4B, 1B, 5A, 1B, 5B, 1B, 6A, 1B, 6B, 1B, 7A, 1B, 7B, 1B, 8A, 1B, 8B, 2A, 2B, 2A, 3A, 2A, 3B, 2A, 4A, 2A, 4B, 2A, 5A, 2A, 5B, 2A, 6A, 2A, 6B, 2A, 7A, 2A, 7B, 2A, 8A, 2A, 8B, 2B, 3A, 2B, 3B, 2B, 4A, 2B, 4B, 2B, 5A, 2B, 5B, 2B, 6A, 2B, 6B, 2B, 7A, 2B, 7B, 2B, 8A, 2B, 8B, 3A, 3B, 3A, 4A, 3A, 4B, 3A, 5A, 3A, 5B, 3A, 6A, 3A, 6B, 3A, 7A, 3A, 7B, 3A, 8A, 3A, 8B, 3B, 4A, 3B, 4B, 3B, 5A, 3B, 5B, 3B, 6A, 3B, 6B, 3B, 7A, 3B, 7B, 3B, 8A, 3B, 8B, 4A, 4B, 4A, 5A, 4A, 5B, 4A, 6A, 4A, 6B, 4A, 7A, 4A, 7B, 4A, 8A, 4A, 8B, 4B, 5A, 4B, 5B, 4B, 6A, 4B, 6B, 4B, 7A, 4B, 7B, 4B, 8A, 4B, 8B, 5A, 5B, 5A, 6A, 5A, 6B, 5A, 7A, 5A, 7B, 5A, 8A, 5A, 8B, 5B, 6A, 5B, 6B, 5B, 7A, 5B, 7B, 5B, 8A, 5B, 8B, 6A, 6B, 6A, 7A, 6A, 7B, 6A, 8A, 6A, 8B, 6B, 7A, 6B, 7B, 6B, 8A, 6B, 8B, 7A, 7B, 7A, 8A, 7A, 8B, 7B, 8A, 7B, 8B, 8A, 8B

**Step 7 :** Tighten the screw fixing the head stationary plate.

## 7.8. REPEATABILITY ADJUSTMENT

**Step 1 :** Start the self-diagnostic function.

Notes :

- Refer to “Self-Diagnosis Function".

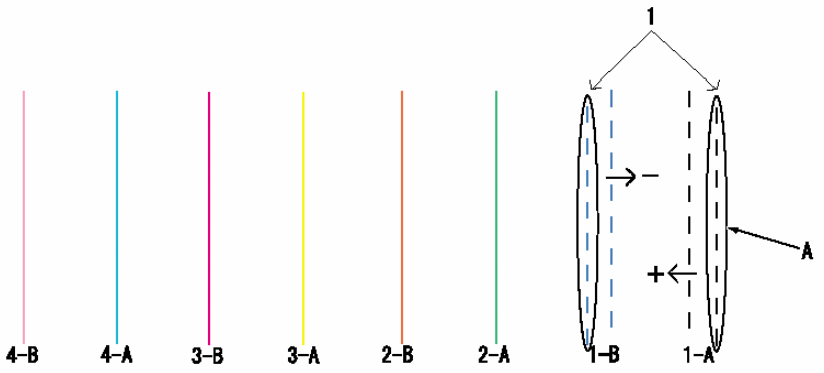
**Step 2 :** Select "Adj:Bi-D".

**Step 3 :** Print a repeatability pattern.

**Step 4 :** Enlarge it using a magnifying glass. If the reference is on right side, adjust the dotted line on printing A using positive values until it becomes straight.

**Step 5 :** Enlarge it using a magnifying glass.

**Step 6 :** If the reference is on left side, adjust the dotted line on printing A using negative values until it becomes straight.




1 = Reference

Notes :

- For 87-inch specifications, the head 5-A, 5-B, 6-A, 6-B, 7-A, 7-B, 8-A, 8-B are added.

**Step 7 :** Adjust reciprocation per head height.

- #1: Head height LOW
- #2: Head height MIDDLE
- #3: Head height HIGH

Notes :

- In the event that all parts of unit do not line up due to part or assembly precision error, make adjustments until everything in the area around center lines up in a straight line.

# 7.9. CW ADJUSTMENT

**Step 1 :** Start the self-diagnostic function.

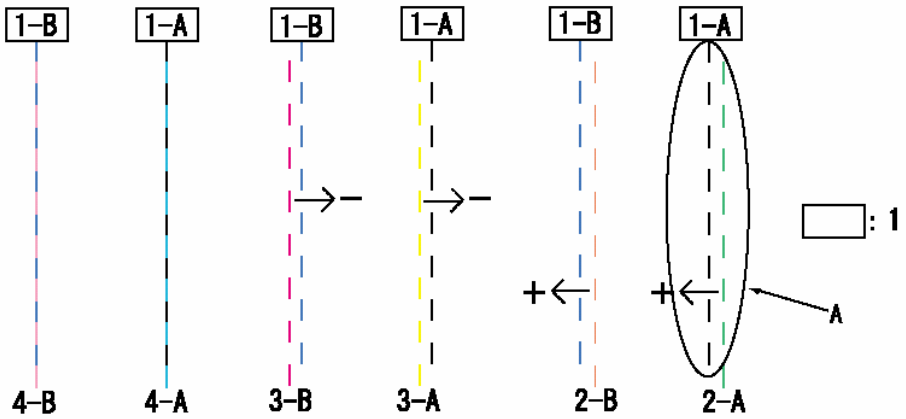
Notes :

- Refer to “Self-Diagnosis Function".

**Step 2 :** Select "Adj:Uni-D".

**Step 3 :** Print CW adjustment pattern.

**Step 4 :** Enlarge using a magnifying glass. Adjust each head until the dotted line on printing A in following figure becomes straight using head 1 as a reference.




1 = Reference head

Notes :

- For 87-inch specifications, the heads 5-A, 5-B, 6-A, 6-B, 7-A, 7-B, 8-A, 8-B are added.
- In the event that all parts of the unit do not line up due to part or assembly precision error, make adjustments until everything in the area around the center lines up in a straight line.

# 7.10. CR DECELERATION BELT TENSION ADJUSTMENT

This section explains the procedure for adjusting the tension of the CR deceleration belt.
When removing/installing the CR deceleration belt, such as when removing the CR motor, adjust the tension of the CR deceleration belt.

## *7.10.1. Tools required for work*

The following tools are required to adjust the tension of the CR deceleration belt.

- Tension gauge: max. 50 N (5 kgf)

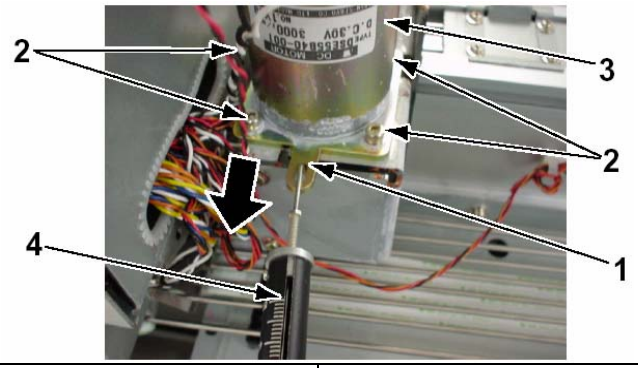
Notes :

- Refer to “Jig and Tool List ".

## *7.10.2. Adjustment Procedure*

Use the following procedure to adjust the tension of the CR deceleration belt.

**Step 1 :** Loosen the 4 hexagon socket head cap screws fixing the CR motor installation board.




| | |
|---|---|
| 1 = CR motor installation board | 2 = Hexagon socket head cap screw |
| 3 = CR motor assembly | 4 = Tension gauge |

**Step 2 :** Install the tension gauge on the PF motor installation board.

**Step 3 :** Pull the tension gauge in the direction of the arrow shown on the figure above.

Notes :

- The regulated value of the tension for the CR deceleration belt is 34.32 N ± 10 % (3,5 kgf ± 10 %).

**Step 4 :** Tighten the 4 hexagon socket head cap screws fixing the CR motor installation board.

# 7.11. COVER SENSOR ADJUSTMENT

This section explains the procedure for adjusting the cover sensor.
When replacing the cover sensor assembly or removing/installing the front cover, use this procedure to adjust the cover sensor.

**Step 1 :** Start the self-diagnostic function.

Notes :

- Refer to “Self-Diagnosis Function ".

**Step 2 :** Select "Check:Test" on the self-diagnostic menu.

**Step 3 :** In the inspection menu, select "Check : Check".

**Step 4 :** Select "Sensor:Etc." on the sensor menu.

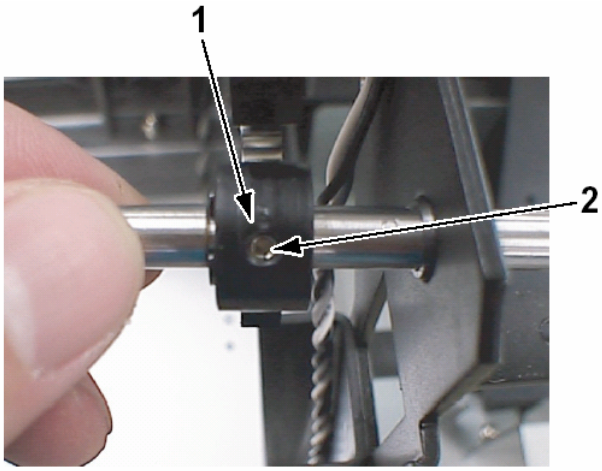
**Step 5 :** Open and close the front cover assembly and make sure the dimension between the media guide and the front cover end is 21 mm, and the display in the operation panel is switched as follows.

| Front cover | Operation panel display |
|---|---|
| Open | Sensor: open |
| Closed | Sensor: closed |

Notes :

- Use a block gauge to measure the height of the front cover when opening it.

**Step 6 :** If the opening height of the front cover and the information displayed on the operation panel are different, adjust the installation position of the sensor cam.




| | |
|---|---|
| 1 = Sensor cam | 2 = Set screw |

**Step 7 :** Use step 5 to check the display on the operation panel once more.

# 7.12. HEAD HEIGHT ADJUSTMENT

This section explains the procedure for adjusting the head height.
If CR cursor assembly is changed, adjust head height.

## *7.12.1. Tools required for work*

The following tools are required when adjusting the head height.
CR gap check jig

Notes :

- Refer to “Jig and Tool List".

## *7.12.2. Adjustment Procedure*

Perform the head height adjustment following the procedures below.

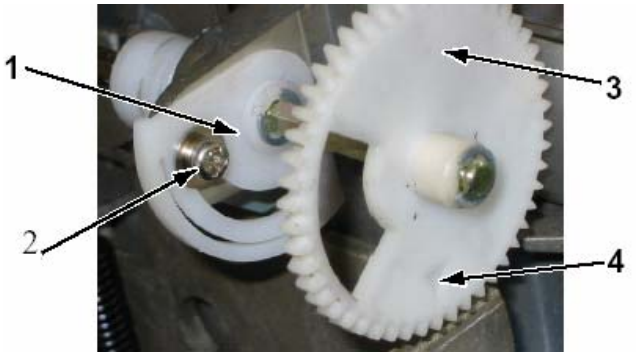
**Step 1 :** Unlock the head lock according to "Head Lock Menu".

**Step 2 :** Move the CR cursor on the platen.

**Step 3 :** Remove the head cover according to "Removing the head cover".

**Step 4 :** Point slide gear mark down so that heads move into low position.

**Step 5 :** Loosen the screws (2, one on the right, one on the left) that fasten the head U/D eccentric shaft lever.



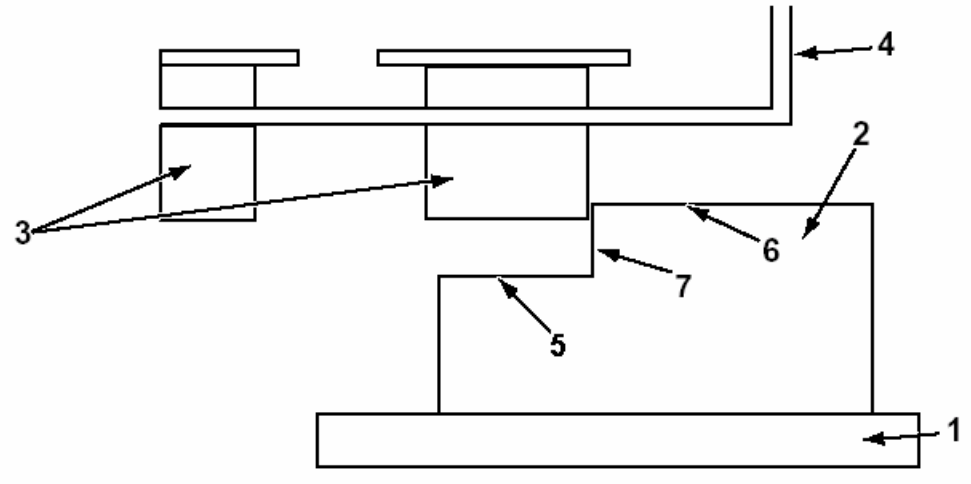

| | |
|---|---|
| 1 = Head U/D eccentric shaft lever | 2 = Screws fixing the head U/D eccentric shaft lever |
| 3 = Slide gear | 4 = Slide gear triangular mark |

**Step 6 :** Put the CR gap adjusting jig on the platen.

**Step 7 :** Move the CR cursor so that 1.2mm side of adjustment jig makes contact with the side of head.

**Step 8 :** Adjust head U/D eccentric shaft lever so that CR gap adjustment jig can move freely.

**Step 9 :** Perform CR cursor right/left adjustment.



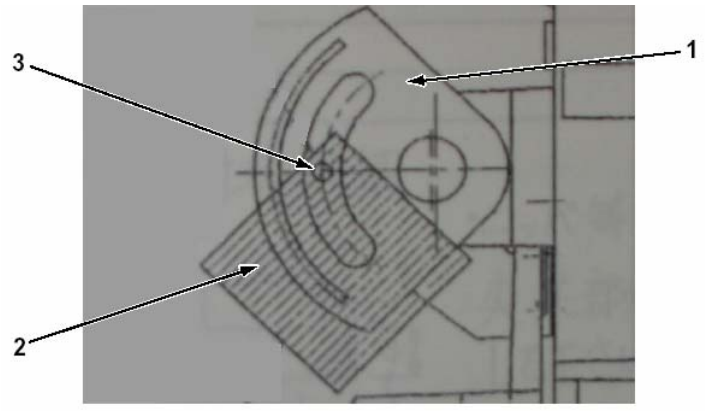

| | |
|---|---|
| 1 = Platen | 2 = CR gap check jig |
| 3 = Print head | 4 = CR cursor |
| 5 = Height 1.2 mm | 6 = Height 1.3 mm |
| 7 = CR gap adjustment jig 1.2 mm side | |

**Step 10 :** Fasten the screws (2, one on the right, one on the left) that fasten the head U/D eccentric shaft lever.

**Step 11 :** Apply non reflective tape to the head U/D eccentric shaft lever as shown in the following printing:

Notes :

- Completely cover the screw heads with non reflective tape. If non reflective tape cannot be applied to chosen location, the head slide sensor may not detect screw head properly.




| | |
|---|---|
| 1 = Head U/D eccentric shaft cover | 2 = Nonreflective tape |
| 3 = Screw fixing the head U/D eccentric shaft cover | |

# 7.13. MEDIA SENSOR SENSITIVITY ADJUSTMENT

This section explains the procedure for adjusting the sensitivity of the media sensor.
When replacing the P_EDGE sensor assembly or Mainboard assembly, adjust the media sensor.

Notes :

- Pay attention to the following points when adjusting the media sensor.
  - This should be performed in an area where sun light and illumination do not influence the sensor.
  - The front cover and Y rail cover should be installed when performing the work.
  - When making adjustments, hold the media by hand or the media hold lever so that the media stays still on the sensor.
- If the media is lifted off, the accuracy of the sensor may be affected.
  - A non-conductive type screw driver should be used when adjusting the control on the Mainboard assembly.
- Otherwise, a short circuit may result if the driver contacts the metal parts, such as electronics parts on the Mainboard assembly or the frame.

## *7.13.1. Tools required for work*

The following tools are required for adjusting the P_EDGE sensor.
Reference media: Double coated media (recommended media)

Notes :

- Refer to “Jig and Tool List".

## *7.13.2. Adjustment Procedure*

Perform the adjustment following the procedures below.

Notes :

- The adjustment values are displayed by a decimal number from the firmware version 1.08 onwards. Perform the adjustment after checking if the right firmware version has been installed.

Notes :

- The adjustment values are as follows.
  - HIGH level (with media) A/D value
  - In hexadecimal number : D8 to DF (H)
  - In decimal number : 216 to 223 (H)
  - LOW level (without media) A/D value
  - In hexadecimal number : 30 to 0 (H)
  - In decimal number : 48 to 0 (H)

## *(1) HIGH level (with media) adjustment of the A/D value*

**Step 1 :** Set the standard media.

**Step 2 :** Select "Check : Head Lock" in the self-diagnosis menu.

Notes :

- Refer to “Self-Diagnosis Function ".

**Step 3 :** Release the head lock.

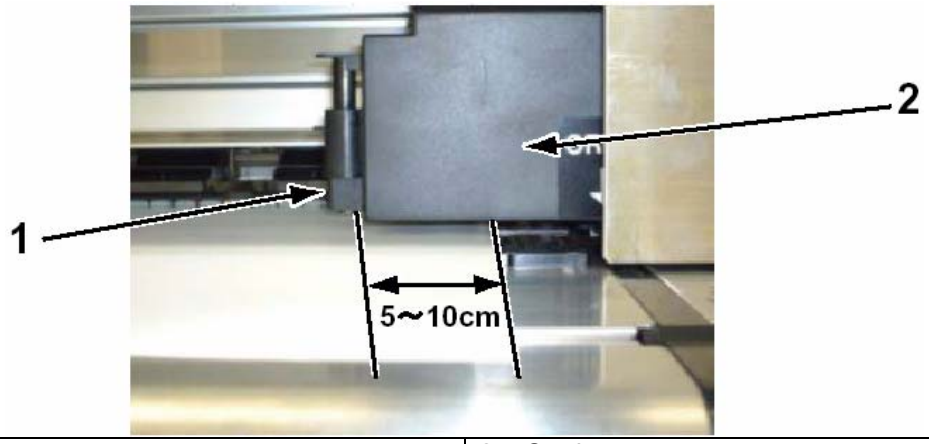
**Step 4 :** Check if the installation angle of the P_EDGE sensor is 15°.

**Step 5 :** In the inspection menu, select "Check : Check".

**Step 6 :** Display "Sensor : PaperEdgeAD".

**Step 7 :** Open the front cover.

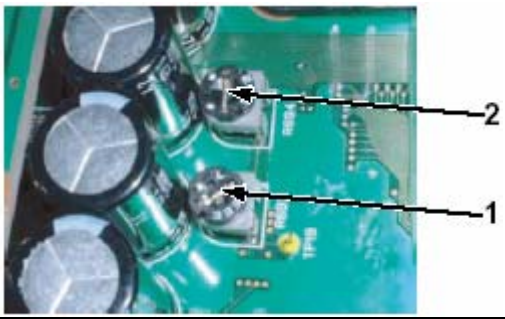
**Step 8 :** Move the carriage so that the dimension between the right edge of the standard media and the cutter is 5 to 10 cm.




| | |
|---|---|
| 1 = Razor Blade | 2 = Carriage |

**Step 9 :** Adjust the P_EDGE sensor control shown in the following figure so that the values displayed in the operation panel become the adjustment value.

- Control R693: Rough adjustment
- Control R694: Fine adjustment

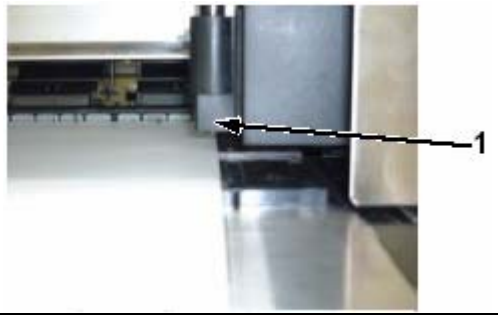



| | |
|---|---|
| 1 = Volume R693 | 2 = Volume R694 |

## *(2) LOW level (without media) A/D value check*

**Step 1 :** Adjust the A/D value of the HIGH level following the "(1) HIGH level A/D value adjustment" procedure.

**Step 2 :** Align the cutter and the right edge of the standard media by moving the carriage.




| |
|---|
| 1 = Razor Blade |

Notes :

- Perform the following if the A/D values of the edge sensor are not the adjustment value.

1 ) Checking the installation angle (about 15°) of the P_EDGE sensor assembly
2 ) Replacing the P_EDGE sensor assembly
3 ) Re-inspecting the Mainboard assembly

**Step 3 :** Make sure that the values displayed in the operation panel are as shown below.

- In hexadecimal number : 30 to 0
- In decimal number : 48 to 0

# 7.14. CUTTER ADJUSTMENT

This section explains the procedure for adjusting the cutter.
When replacing the sub-platen, replacing the solenoid assembly, or removing/installing media guide F, use this procedure to adjust the cutter.

**Step 1 :** Confirm if the media has been cut correctly.

Notes :

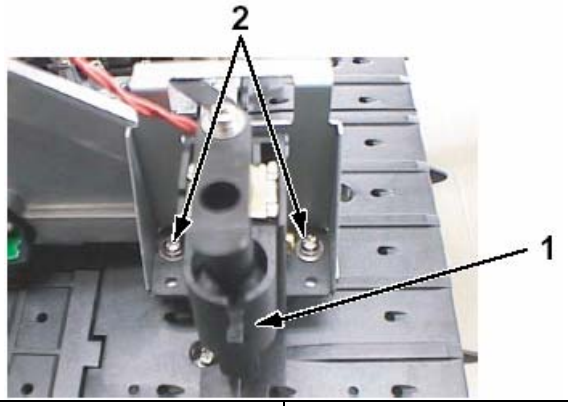
- Refer to “Cutter Endurance menu".

**Step 2 :** If media guide F has been installed at an angle, adjust it.

Notes :

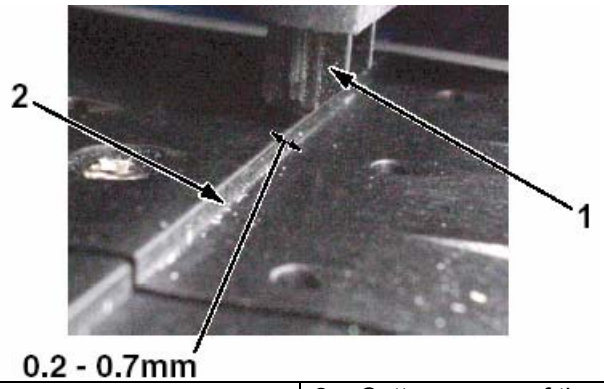
- Refer to “Removing media guide F".

**Step 3 :** Loosen the screw fixing the cutter holder.




| 1 = Cutter holder | 2 = Screws (M3x6) fixing the cutter holder |
|---|---|

**Step 4 :** Slide the cutter holder forward and backward as shown in the following figure so that the dimension between the cutter blade and the cutter groove of the sub-platen is 0.2 to 0.7 mm.




| | |
|---|---|
| 1 = Cutter holder | 2 = Cutter groove of the sub-platen |

**Step 5 :** Tighten the screw fixing the cutter holder.

**Step 6 :** Insert paper into unit. Manually place an indentation into paper.

**Step 7 :** Confirm that the distance between paper indentation and cutter groove is between 0.2 and 0.7mm.

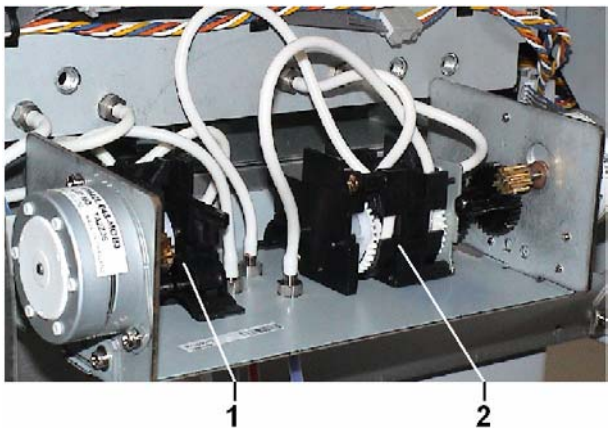
# 7.15. PUMP TUBING LAYOUT FOR PUMP ASSEMBLY

## *7.15.1. Replacing the pump assembly (Rockhopper 4 heater)*

*(1) For 50 or 64 inch spec*

Notes :

- When the pump assembly has been installed to the main body, "pump 1" is the pump on the left and "pump 2" the one on the right, viewed from the front.



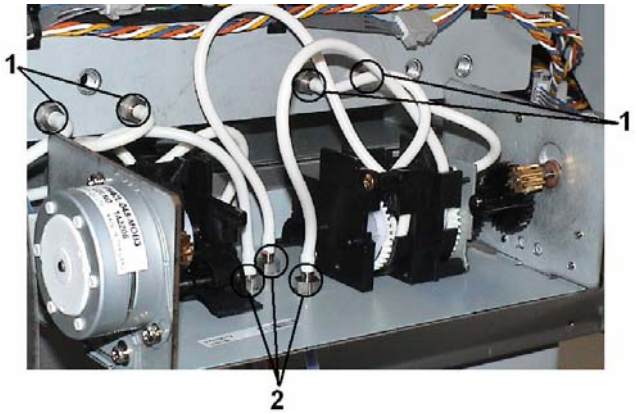

| | |
|---|---|
| 1 = Pump 1 | 2 = Pump 2 |

**Step 1 :** Remove the maintenance cover.

**Step 2 :** Following the instructions in "Self-Diagnosis Functions" to start the equipment up in the self-diagnosis mode and release the head lock.

**Step 3 :** Disconnect the tubes to the heads.

**Step 4 :** Remove the waste tubes from there connector.

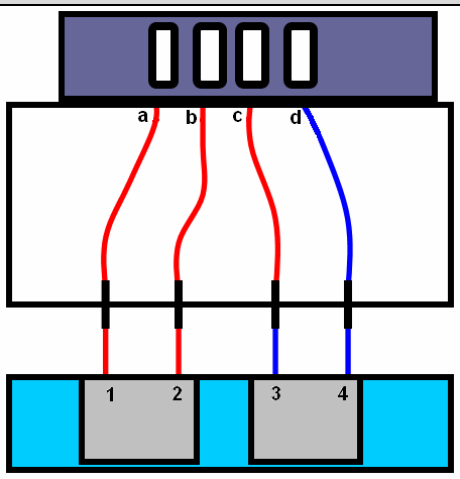
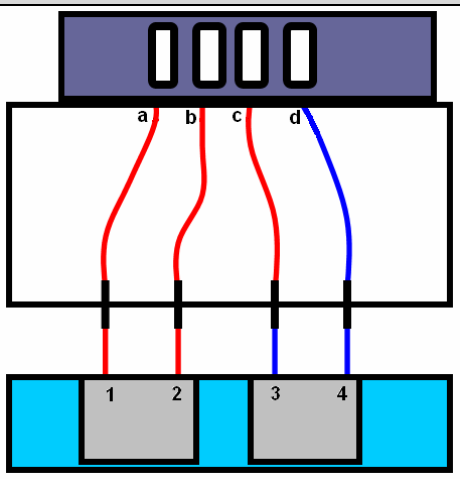



| | |
|---|---|
| 1 = connection to the heads | 2 = waste tube connection |

**Step 5 :** Remove the pump assemblies.

**Step 6 :** Reinstall the new pump assemblies.

**Step 7 :** Reconnect the tubes.

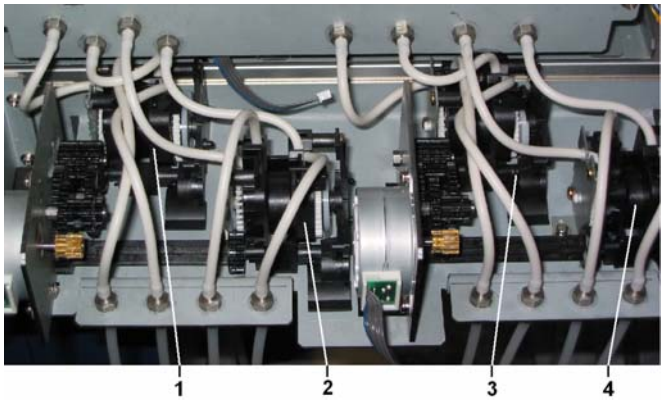
| 50” or 64” Falcon II Outdoor 2 heater | 50” or 64” Falcon II Outdoor 4 heater |
|---|---|
|  |  |



*(2) For 87 inch spec*

Notes :

- When the pump assembly has been installed to the main body, the pumps are "pump 1", "pump 2", "pump 3" and "pump 4" in sequence from left to right, viewed from the front.





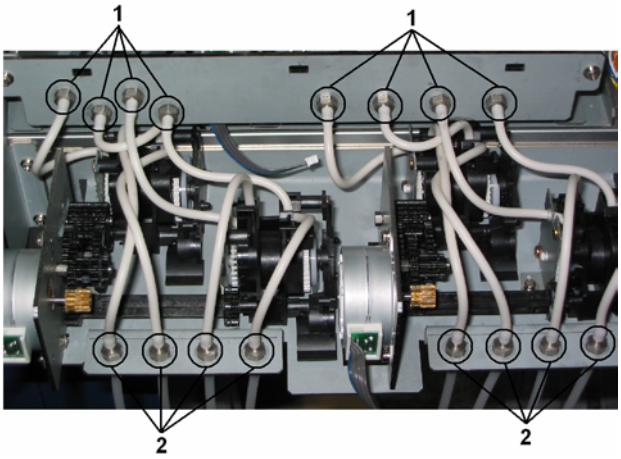
| | |
|---|---|
| 1 = Pump 1 | 2 = Pump 2 |
| 3 = Pump 3 | 4 = Pump 4 |

**Step 1 :** Remove the maintenance cover.

**Step 2 :** Following the instructions in "Self-Diagnosis Functions" to start the equipment up in the self-diagnosis mode and release the head lock.

**Step 3 :** Disconnect the tubes to the heads.

**Step 4 :** Remove the waste tubes from there connector.

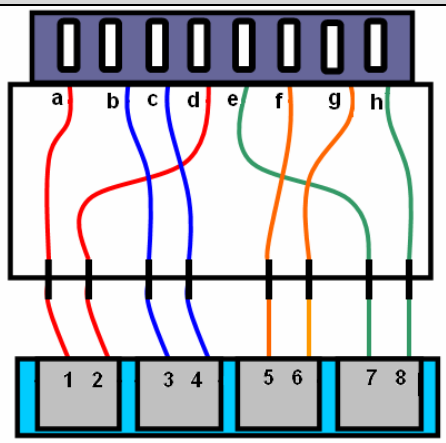
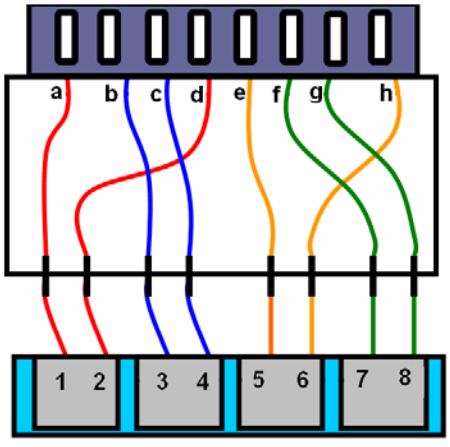



| | |
|---|---|
| 1 = connection to the heads | 2 = waste tube connection |

**Step 5 :** Remove the pump assemblies.

**Step 6 :** Reinstall the new pump assemblies.

**Step 7 :** Reconnect the tubes.

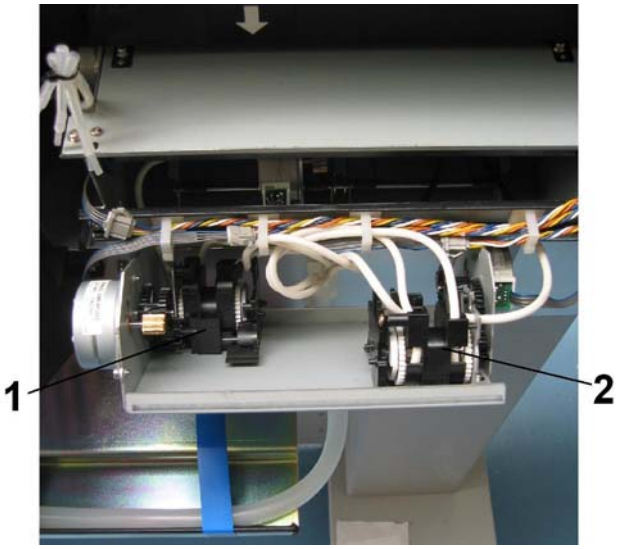
| 87” Falcon II Outdoor 2 heater | 87” Falcon II Outdoor 4 heater |
|---|---|
|  |  |

## *7.15.2. Replacing the pump assembly (Rockhopper 2 heater)*

*(1) For 50 or 64 inch spec*

Notes :

- When the pump assembly has been installed to the main body, "pump 1" is the pump on the left and "pump 2" the one on the right, viewed from the front.




| | |
|---|---|
| 1 = Pump 1 | 2 = Pump 2 |

**Step 1 :** Remove the carriage cover according to "Removing the carriage cover".

**Step 2 :** Remove the maintenance cover according to "Removing the maintenance cover".

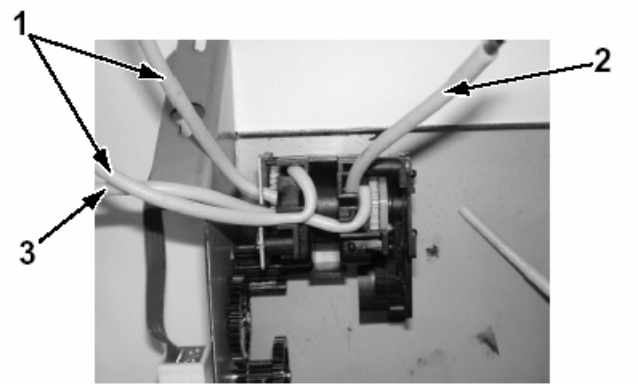
**Step 3 :** Following the instructions in "Self-Diagnosis Functions", start the equipment up in the self-diagnosis mode and release the head lock.

**Step 4 :** Following the instructions in "Replacing the Maintenance Assembly", disconnect the tubes connecting side plate T and the cap to the pump assembly.

**Step 5 :** Remove the tubes and connectors, etc., from the locking wire saddle of side plate F.

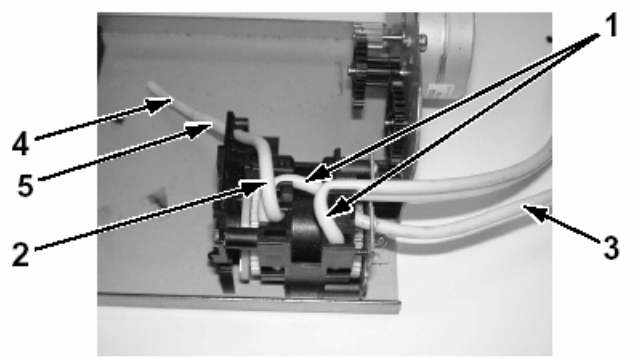
**Step 6 :** Remove side plate F.

**Step 7 :** Connect up the tubing in the manner shown in the figure below.



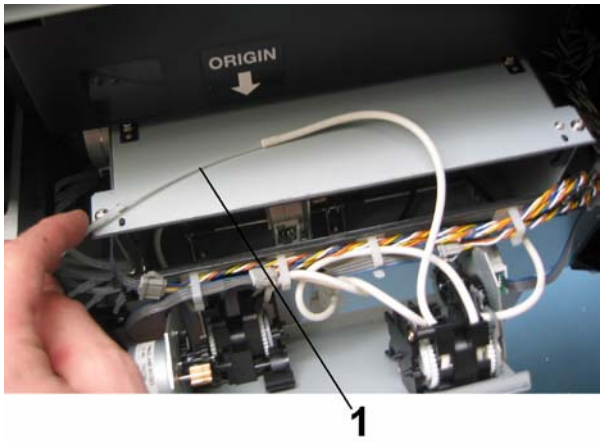

| | |
|---|---|
| 1 = Tube connecting to the waste fluid tube | 2 = Tube connecting cap 3 |
| 3 = Tube connecting to cap 1 | |

**Step 8 :** Use a linking tube to connect the new-part pump tube (DF-43951) to the tube connecting cap 2.



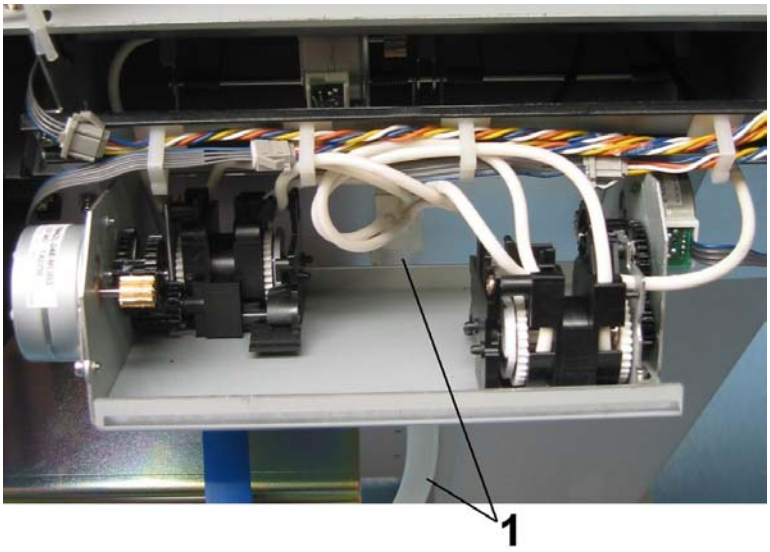

| | |
|---|---|
| 1 = Tube connecting to waste fluid side | 2 = Tube connecting to cap 2 |
| 3 = Tube connecting to cap 4 | 4 = Newly-added pump tube (DF-43951, length = 40 mm) |
| 5 = 2 tube for linking | |

**Step 9 :** Insert into the waste fluid tubes from the pumps a piece of tube (DF-43951; 15 cm).




| |
|---|
| 1 = piece of tube (15 cm) |

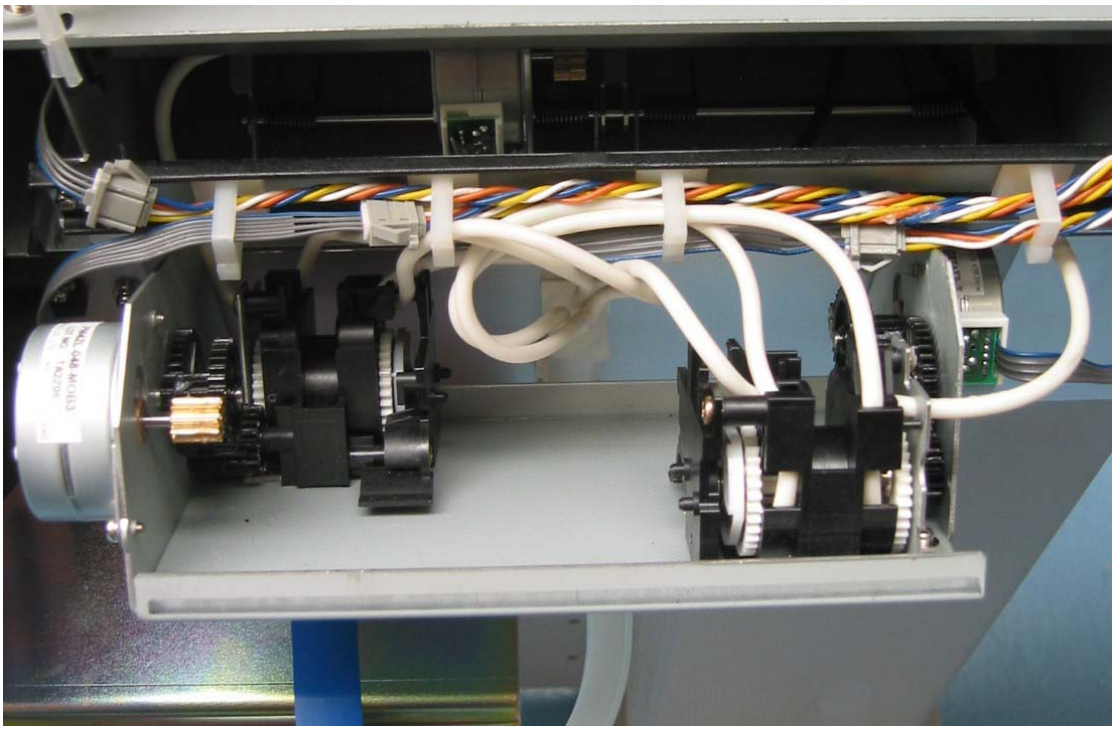
**Step 10 :** Bundle the waste fluid tubes in the large waste fluid tube.




| 1 = large waste fluid tube |
|---|

**Step 11 :** Bundle the connectors together in the locking wire saddle.

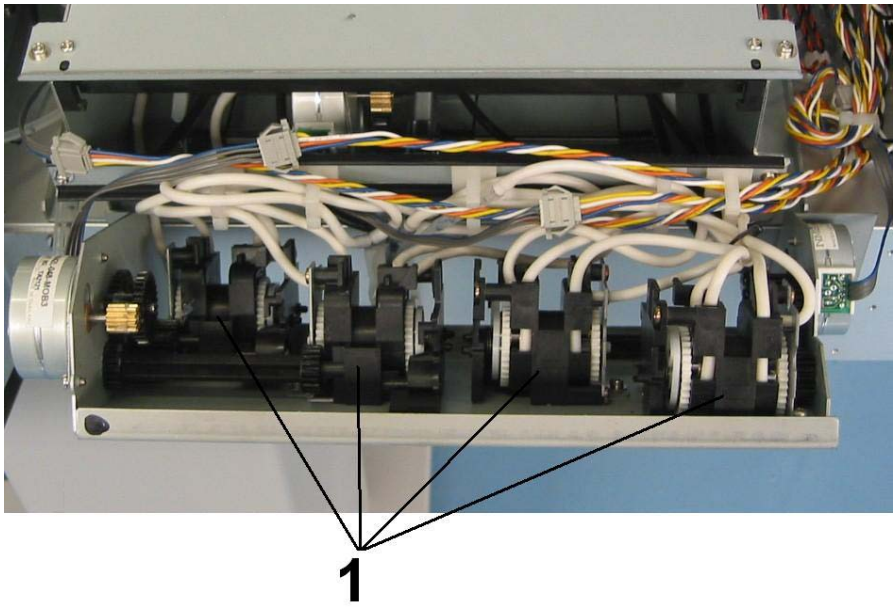
**Step 12 :** Bundle the remaining tubes, cables and connectors together in the manner shown in the figure below.



## *(2) For 87 inch spec*

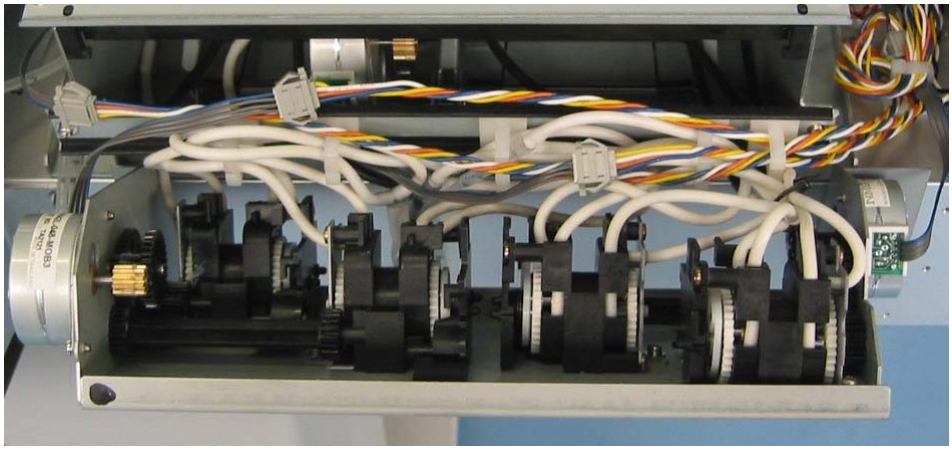
Notes :

- When the pump assembly has been installed to the main body, the pumps are "pump 1", "pump 2", "pump 3" and "pump 4" in sequence from left to right, viewed from the front.
- When the pump assembly has been installed to the main body, the bundling locations are "bundling location A", "bundling location B" and "bundling location C" in sequence from left to right, viewed from the front.

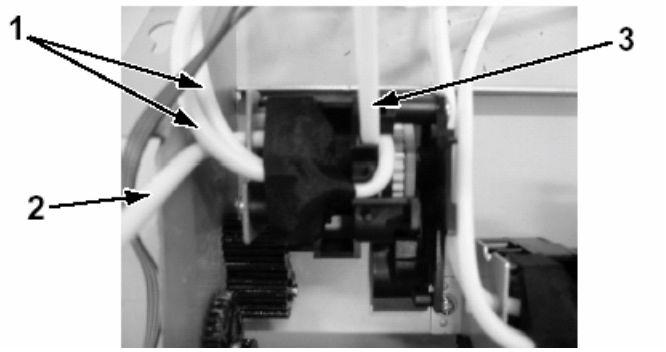



1 = Pumps

**Step 1 :** Waste fluid tube E and an ink tube joining tube are added between fluid tube A and the pump 4 tube fitting that groups together the waste fluid side tubes.

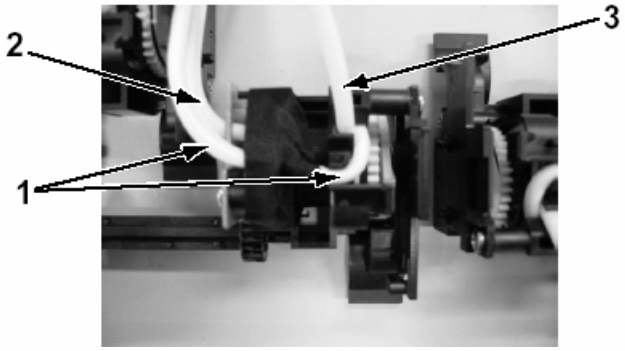


**Step 2 :** Connect up the tubing for pump 1 as shown on the figure below.



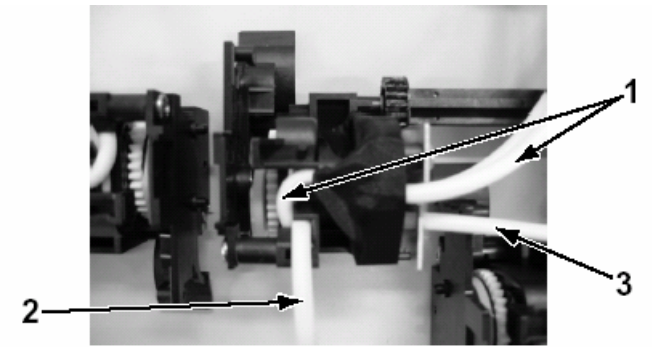

| | |
|---|---|
| 1 = Tube connecting to waste fluid tube | 2 = Tube connecting to cap 1 |
| 3 = Tube connecting to cap 4 | |

**Step 3 :** Connect up the tubing for pump 2 in the manner shown in the figure below.



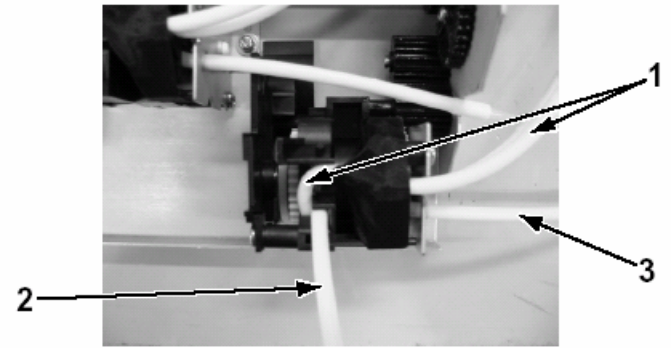

| | |
|---|---|
| 1 = Tube connecting to waste fluid tube | 2 = Tube connecting to cap 2 |
| 3 = Tube connecting to cap 3 | |

**Step 4 :** Connect up the tubing for pump 3 as shown in the figure below.



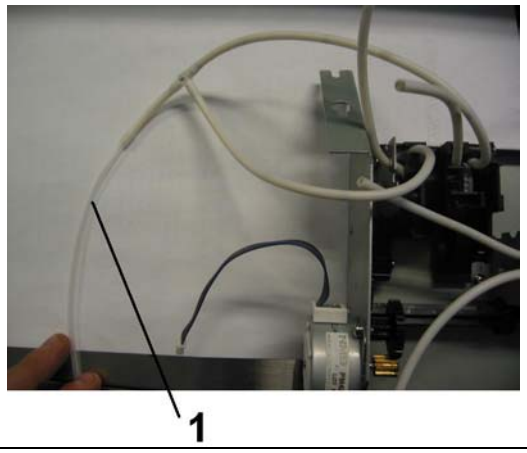

| | |
|---|---|
| 1 = Tube connecting to waste fluid tube | 2 = Tube connecting to cap 6 |
| 3 = Tube connecting to cap 7 | |

**Step 5 :** Connect up the tubing for pump 4 as shown in the figure below.




| | |
|---|---|
| 1 = Tube connecting to waste fluid tube | 2 = Tube connecting to cap 5 |
| 3 = Tube connecting to cap 8 | |

**Step 6 :** Insert in the waste fluid tubes from the pumps a piece of 15 cm tube (DF-43951).

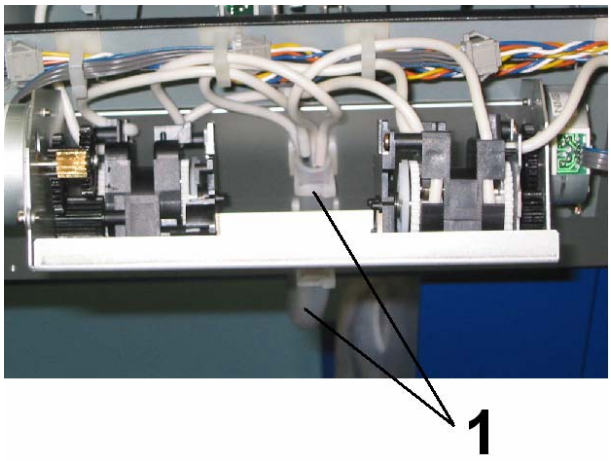



| |
|---|
| 1 = piece of tube (15 cm) |

**Step 7 :** Stick the locking wire saddle onto side plate F.

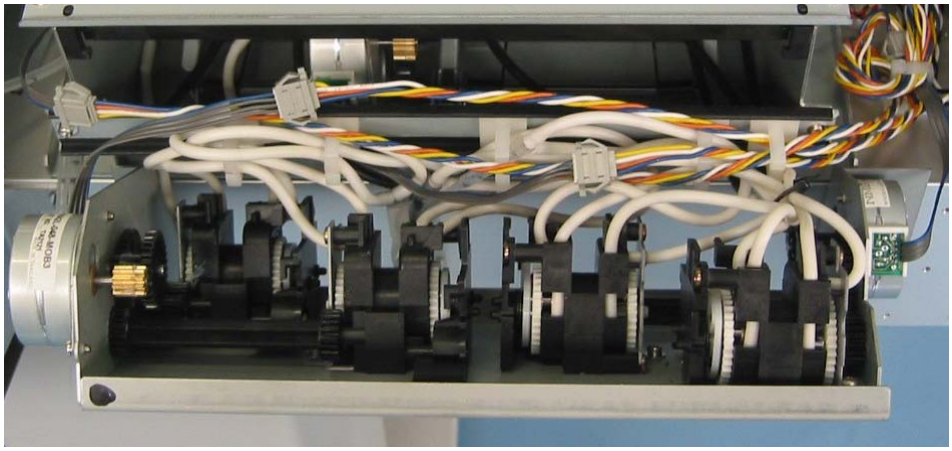
**Step 8 :** Bundle the tubes and connectors together in the locking wire saddle.

**Step 9 :** Bundle the waste fluid tubes in the large waste fluid tube.




1 = large waste fluid tube

**Step 10 :** Bundle the remaining tubes, cables and connectors together in the manner shown in the figure below.



# 8. MAINTENANCE

## 8.1. INTRODUCTION

This chapter provides information about the periodical services, part life, lubrication/bonding and transport.

**Important :**

- **Before replacing parts, be sure to perform following operations.**
  - **Turn the machine power OFF.**
  - **Remove the product's electrical plug from the socket. Otherwise, you may suffer electric shock or the machine's electric circuits may be damaged.**
- **Disconnect all cables from the machine. Not doing so could cause damage to the printer.**

**Caution :**

- Ensure there is sufficient space around the printer when performing maintenance work.
- If you need to operate the printer with the cover removed for maintenance, be careful not to get hurt by the moving parts.
- In the periodical services, the following work must be performed with one or more assistant worker.
  - Removing/attaching the unit and the stand
  - Packaging the machine for transport

# 8.2. CLEANING

You need to clean the printer periodically to keep it in best working condition.

Notes :

- Refer to the User's Guide.
- Refer to "Exploded Views/Service Parts List".

| Part | Timing | Check point | Action |
|---|---|---|---|
| Platen surface<br>Media guide F<br>Pressure rollers | Several times per year | ➢ Media dust accumulation<br>➢ Foreign objects<br>➢ Damages | Clean it.<br><br>Please note : If ink deposits are present, remove them with a dampened cloth and wipe the area with a clean dry cloth. |
| Timing fence<br>(CR encoder detection slit plate) | Several times per year | ➢ Media dust accumulation<br>➢ Foreign objects<br>➢ Damages | Clean it.<br>If any damages are found, replace the part. |
| P_REAR sensor surface | Several times per year | ➢ Media dust accumulation<br>➢ Foreign objects | Clean it. |
| Cleaner head (Cleaning wiper) | Several times per year | ➢ Ink deposits<br>➢ Damages | Clean it. |

# 8.3. PERIODICAL SERVICES

This section describes the periodical services required for this machine.
The periodical services ensure stable printout quality of the machine.
In the periodical services, some service parts may be checked, cleaned or replaced.

**Caution :**

- There are to parts of periodical service, namely the parts that can be replaced by the end-user and the parts that needs to be done by authorized Mutoh technicians.

## 8.3.1. Service by end-user

Perform periodical inspections according to the table below.

| N° | Part number | Quantity | Action |
|---|---|---|---|
| 1 | DF-43637 + DF-43643 | 4+1 | Replace the wipers and sponge. |
| 2 | DF-43694 + DF-35399 | 2+1 | Replace the sponge at the back of the capping station. |
| 3 | / | / | Clean the wipers. |
| 4 | / | / | Clean caps in the maintenance station. |
| 5 | / | / | Clean around the bottom of the heads. (NOT the nozzle plate) |

| N° | Month | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 1 | | | X | | | | | | X | | | |
| 2 | | | X | | | X | | | X | | | X |
| 3 | WEEKLY | | | | | | | | | | | |
| 4 | WEEKLY | | | | | | | | | | | |
| 5 | WEEKLY | | | | | | | | | | | |

## 8.3.2. Service by authorised Mutoh technician

Perform periodical inspections according to the table below.

| N° | Part number | Quantity | Action |
|---|---|---|---|
| 1 | MY-42110 | 4 | Replace the dampers. |
| 2 | MY-41405 | 2 | Replace the pumps. |
| 3 | MY-35380 + DF-43637 | 1+4 | Replace wiper arm and wipers. |
| 4 | ME-18280 | 4 x 0.8 m | Replace the tubing from the pumps to the waste bottle |
| 5 | MY-35085 + ME-80385 + ME-60014 | 1+ 1 m +1 | Replace the right spitting box + tube + L connection |
| 6 | MY-80627 | 1 | Replace the capping station. |
| 7 | / | / | Apply grease on head up-down cams. |
| 8 | / | / | Apply grease on Y-motor belt. |
| 9 | / | / | Apply grease on roller path carriage. |
| 10 | / | / | Apply grease on capping station camm + gears. |
| 11 | / | / | Clean the maintenance station area. |
| 12 | / | / | Remove dust in fan area underneath print platform. |

| N° | Month | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 1 | | | | | | | | | | | | X |
| 2 | | | | | | X | | | | | | X |
| 3 | | | | | | X | | | | | | X |
| 4 | | | | | | | | | | | | X |
| 5 | | | | | | X | | | | | | X |
| 6 | | | | | | | | | | | | X |
| 7 | | | | | | X | | | | | | X |
| 8 | | | | | | X | | | | | | X |
| 9 | | | | | | X | | | | | | X |
| 10 | | | | | | X | | | | | | X |
| 11 | | | | | | X | | | | | | X |
| 12 | | | | | | X | | | | | | X |

# 8.4. PART LIFE INFORMATION

This section shows how to check the life of a service part.
To know the life of a service part, check the maintenance counter from the counter display menu in the maintenance mode.

Notes :

- Refer to "Counter Display Menu" for more details of the counter display menu.

| Name | Life expectancy | Warning display |
|---|---|---|
| Print head | 28 billion dot | Warning at 95%<br>(Warning Head Life) |

# 8.5. JIG AND TOOL LIST

This section provides lists of jigs and tools required for service operations.

## *8.5.1. Required Tools*

### *(1) Tools for part replacement*

| No. | Name | Part code | Remarks |
|---|---|---|---|
| 1 | Philips driver No.2 | Generic product | Shaft length should be 250 mm or more. |
| 2 | Philips driver No.2 | Generic product | Shaft length should be 50 mm or less. |
| 3 | Philips driver No.1 | Generic product | Generic product For head adjustment, shaft length 150 mm or more |
| 4 | Flat-head driver | Generic product | |
| 5 | Pliers | Generic product | |

| | | | |
|---|---|---|---|
| 6 | Tweezers | Generic product | |
| 7 | Hexagon wrench (1.5 mm to 6.0 mm) | Generic product | For head adjustment, etc. |
| 8 | Box driver (5.5 mm) | Generic product | For exchanging the mainboard |
| 9 | Box driver (7.0 mm) | Generic product | For exchanging the power board |
| 10 | E ring holder (E-2.5) | Generic product | JIS E-2.5<br>IWATA DENKO Co., Ltd. |
| 11 | E ring holder (E-4) | Generic product | JIS E-5<br>IWATA DENKO Co., Ltd. |
| 12 | Head cleaning jig | JD-30410 | ➢ Exclusive rubber bush, including mini fitting<br>➢ 4 set required per a main unit |
| 13 | Rubber bush | JD-42052 | Expendable supplies (exchange per using 20 times) |
| 14 | Mini fitting | JD-42053 /<br>Generic product | Maker: Iuchi Seieido Co., Ltd. |
| 15 | Cleaning liquid | A29 JD-41844 | 18l |
| 16 | Bottle for cleaning liquid (500 ml) | JD-42054 /<br>Generic product | |

## *(2) Tools for adjustment*

| No. | Name | Part code | Remarks |
|---|---|---|---|
| 1 | Personal computer | Generic product | Printer port mounted parts |
| 2 | Printer cable | Generic product | Amphenol 36P, male connector |
| 3 | Tension gauge | Generic product | For measuring 5,000g Max.<br>Reference maker: Oba Keiki Seisakusho |
| 4 | Tension gauge | Generic product | Max. capacity should be 200 to 500g.<br>Reference maker: Oba Keiki Seisakusho |
| 5 | Y-axis tension attachment | JD-42050 | For steel belt tension adjustment<br>➢ Gauge diameter: 4 mm (0.16in.) or less |
| 6 | Y-axis tension attachment 2 | JD-42435 | For steel belt tension adjustment<br>➢ Gauge diameter: 2 mm (0.08in.) or less |
| 7 | CR gap check jig | JD-42177 | For head height adjustment |
| 8 | Flash memory card | Generic product | Spec.:<br>4MB Flash Memory Card<br>Type-II (PCMCIARel.2.1/JEIDAVer.4.2)<br>5V unique driving spec. |
| 9 | Loupe (equivalent to 10x) | Generic product | Generic product For head precision adjustment |
| 10 | Block gauge (21 mm) | Generic product | Generic product For cover sensor adjustment |
| 11 | Hand glass | Generic product | Generic product For checking the cap trace |
| 12 | Double coated media | Exclusive specified media | For adjusting printing accuracy and sensor sensitivity<br>Maker: Mitsubishi inkjet media<br>Product number: IJ-MatteCort 143<br>Other similar media<br>RJ6-THCCPAPE 137 (MUTOH) |
| 13 | Straight scale (1000 mm) | Generic product | |

# 8.6. LUBRICATION/BONDING

This section covers the lubrication/bonding information.
After disassembling/assembling this machine, always perform necessary lubrication/bonding according to the table below.

**Caution :**

- Do not oil the printer mechanism with oil other than designated by MUTOH. Doing so may damage the parts or shorten the lifetime.

| Parts | | Item | Manufacturer | Type |
|---|---|---|---|---|
| PF Driving Components | U/D gear of the pressurizing arm | Apply to the gear components | Kanto Kasei Co., Ltd. | FLOIL G-MK-1 |
| | Arm motor mounting plate and intermediate gear boar diameter part | Coating the intermediate gear boar part | Kanto Kasei Co., Ltd. | FLOIL G-MK-1 |
| | Deceleration pulley | Apply to the driving pulley | Kanto Kasei Co., Ltd. | FLOIL G-MK-1 |
| | X-axis deceleration belt | Coating the deceleration belt gear intermesh part | Kanto Kasei Co., Ltd. | FLOIL G-MK-1 |
| CR Driving Components | Y rail machining drawing | Coating the hole that fastens the Y drive base | Kanto Kasei Co., Ltd. | FLOIL G-MK-1 |
| | | Coating the hole that fastens the return pulley mounting plate | Kanto Kasei Co., Ltd. | FLOIL G-MK-1 |
| | Y rail and Roller guide | When inserting the Y rail, apply to the lower face of the roller guide. | Kanto Kasei Co., Ltd. | FLOIL G-MK-1 |
| | Pressurizing axis bearing | Coating the upper part and shaft insertion part | Kanto Kasei Co., Ltd. | FLOIL G-MK-1 |
| | Pressurizing cam | Apply to the cam components | Kanto Kasei Co., Ltd. | FLOIL G-MK-1 |
| | Roller guide | Apply to the roller guide surface. | Mitsubishi | Super multi dia tetra No.32 |
| | Slide idler gear | Apply to the gear components | Kanto Kasei Co., Ltd. | FLOIL G-MK-1 |
| | Driving pulley | Apply to the driving pulley | Kanto Kasei Co., Ltd. | FLOIL G-MK-1 |
| | CR deceleration belt | Coating the deceleration belt gear intermesh part | Kanto Kasei Co., Ltd. | FLOIL G-MK-1 |
| Cursor Components | Head U/D colour | Apply to the head U/D colour | Kanto Kasei Co., Ltd. | FLOIL G-MK-1 |
| | Head U/D cam | Apply to the head U/D cam | Kanto Kasei Co., Ltd. | FLOIL G-MK-1 |
| | Slide gear | Apply to the gear components | Kanto Kasei Co., Ltd. | FLOIL G-MK-1 |

| | | | | |
|---|---|---|---|---|
| Head base components | Head installation board | Apply to the screw hole position which fastens the shoulder screw | Kanto Kasei Co., Ltd. | FLOIL G-MK-1 |
| Maintenance components | Maintenance assembly | Apply to the gear and cam components | Kanto Kasei Co., Ltd. | FLOIL G-MK-1 |
| Pump Components | Combined gear | Apply to the gear components | Kanto Kasei Co., Ltd. | FLOIL G-MK-1 |
| | Deceleration gear | Apply to the gear components | Kanto Kasei Co., Ltd. | FLOIL G-MK-1 |
| | Idler gear | Apply to the gear components | Kanto Kasei Co., Ltd. | FLOIL G-MK-1 |
| | Idler gear axis | Apply between the pump base and the idler gear axis. | Kanto Kasei Co., Ltd. | FLOIL G-MK-1 |
| Winding components | Winding assembly (gear components) | Apply to the gear components | Kanto Kasei Co., Ltd. | FLOIL G-MK-1 |

| Parts | | Item | Manufacturer | Type |
|---|---|---|---|---|
| PF Driving Components | Set screw | Apply the screw lock to the coupling set screw. | Three Bond Co., Ltd. | 1401 |
| CR Driving Components | Adjusting screw of the CR slave pulley | After adjusting the steel belt, apply the screw lock. | Three Bond Co., Ltd. | 1401 |
| Cursor Components | Step-bore screw | Screw lock applying to the shoulder screw that fastens the cursor and head mounting plate | Three Bond Co., Ltd. | 1401 |
| Maintenance components | E ring | Apply to each of the E-rings (prevents noise due to vibration). | Three Bond Co., Ltd. | 1401 |
| Scroller receptacle R components | Set screw | Apply the screw lock to the adjusting knob set screw. | Three Bond Co., Ltd. | 1401 |
| Others | Screw | Apply to the position of the screw lock. | Three Bond Co., Ltd. | 1401 |
| PF Driving Components | CR tape power cable | Stick double-sided tape to the CR tape power cables (locating). | Not specified | |
| Head base components | Head 2 tape wire | Stick double-sided tape to the head 2 tape power cables (locating and preventing floatation). | Not specified | |

| | | | | |
|---|---|---|---|---|
| Pump Components | Pump assembly | Acetate tape is fixed to the pump assembly tube (prevents dislodging of tube). | Not specified | |
| Others | Locations where sharp edges are likely to occur | Acetate tape is fixed to tape electrical wires and harnesses, where sharp edges are likely to occur (sharp edge protection). | Not specified | |

# 8.7. TRANSPORTATION OF MACHINE

This section explains transferring and transporting the printer.
When you transport the printer, the printer should be repackaged using the original box and packing materials, to protect it from vibration or impact.
Transport the printer following the procedures below.

## *(1) Task before transportation*

**Step 1 :** Turn on the power to the product.

**Step 2 :** Verify if the product is at a normal status.

**Step 3 :** Start the auto-diagnostic function.

Notes :

- Refer to “Self-Diagnosis Function”.

**Step 4 :** Select "Adj:CleanHead".

**Step 5 :** Select "CleanHead" menu.

Notes :

- Refer to “Head wash menu”.

**Step 6 :** When the head cleaning has been finished, turn the power OFF.

**Step 7 :** Remove the scroller.

**Step 8 :** Disconnect the power cable and all other cables.

**Step 9 :** Install the protective materials.

Notes :

- Refer to the User’s Guide.

**Step 10 :** Remove the product from the special stand.

Notes :

- Refer to the User's Guide.

**Step 11 :** Package the machine

*(2) Task after transportation*

**Step 1 :** Unpack, assemble, and install the machine.

**Step 2 :** Make the machine ready for operation.

# 9. TROUBLESHOOTING

## 9.1. INTRODUCTION

This chapter explains the procedures for troubleshooting this product.
When the product indicates a failure and an error message is also displayed on the control panel, refer to "Troubleshooting procedures when a message has been displayed" and implement treatment. When the product indicates failure but an error message has not been displayed, refer to "Troubleshooting procedures when an error message has not been displayed" and implement treatment.

## 9.2. TROUBLESHOOTING PROCEDURES WHEN A MESSAGE HAS BEEN DISPLAYED

This chapter explains the messages displayed when the product is operating normally and when an error occurs.
There are the following types of messages.

| Priority level | Message Type | Description | Refer to |
|---|---|---|---|
| 1 | Operating condition display | Displayed when the product is operating normally | → Operating condition display |
| 2 | Heating system error | Displayed when heating element errors occurs during operation. | → Heating system error |
| 3 | Message type errors | Message type errors are displayed when trouble occurs during operation. | → Message type errors |
| 4 | Data error | Displayed when data communication trouble occurs between the computer and this product. | → Data error |
| 5 | Command errors | Displayed when trouble occurs during analysis of the command data that is sent to this product from the computer. | → Command errors |
| 6 | Errors requiring restart | Displayed when trouble that is critical to the operation of this product occurs. | → Errors requiring restart |

## *9.2.1. Operating condition display*

This chapter explains the messages displayed, the items to be confirmed and the remedy.

| No. | Message | Phenomenon | Check point | Action | Refer to |
|---|---|---|---|---|---|
| 1 | Cover Open | The front cover is open. | (1) Check if the cover R/L sensor assembly comes on and off properly when the front cover is opened and closed. | • Adjust the operating position of the cover sensor R/L assembly. | → Cover sensor adjustment |
| | | | (2) Make sure that cables for the cover sensor assembly are securely connected. | • Securely connect the cables for the cover sensor assembly to connectors J155 and J156 on the mainboard assembly.<br>• Securely connect the cover L sensor to the cover L cable. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly.<br>→ Cover sensor adjustment |
| | | | (3) The Mainboard assembly may have a problem. | • Replace the Mainboard assembly. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| 2 | Set Paper | The lever is up | (1) Check the operation of the transmission photosensor for the lever up/down via “Test:Sensor” of the self-diagnostic function. | • Replace the transmission photosensor at the lever. | → Replacing the transmission photosensor. |
| | | | (2) Make sure the transmission photosensor at the lever motor has been securely installed. | • If the transmission photosensor is detached, fix it securely. | → Replacing the transmission photosensor. |
| | | | (3) Check the sensor element of the transmission photosensor at the lever motor for contamination. | • Clean the sensor element using cotton swabs. | → Replacing the transmission photosensor. |

| | | | | | |
|---|---|---|---|---|---|
| | | | (4) Make sure the transmission photosensor cables at the lever motor have been securely installed. | • Securely connect the transmission photosensor cables to Mainboard assembly connectors J123 and J124. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| | | | (5) Check the operation of the foot lever via "Test:Sensor" of the self-diagnostic function. | • Replace the foot switch | → Refer to the User's Guide |
| | | | (6) The Mainboard assembly may have a problem. | • Replace the Mainboard assembly. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| 3 | Paper End | The paper is not setup | (1) Check he operation of the "Test:Sensor" via the self-diagnostic function. | • If OFF is displayed when he paper is setup, replace he P_REAR sensor assembly. | → Replacing the P_REAR_R sensor assembly and P_REAR_L sensor assembly. |
| | | | (2) Make sure P_REAR sensor assembly cables underneath the paper guide R are securely connected. | • Securely connect the cables to Mainboard assembly connectors J128 and J129. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| | | | (3) The P_REAR sensor assembly may be damaged. | • Replace the P_REAR sensor assembly. | → Replacing the P_REAR_R sensor assembly and P_REAR_L sensor assembly. |
| | | | (4) The Mainboard assembly may have a problem. | • Replace the Mainboard assembly. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |

## *9.2.2. Message type errors*

The following explains the messages, items to be confirmed and remedies to take when message type errors occur while the product is operating.
Message type errors are displayed when trouble occurs during operation.
When message type errors occur, this product displays the following error messages on the operation panel and stops the operation.
When the causes of errors are removed, message type errors are restored and the printing operation will be restarted.

| No. | Message | Phenomenon | Check point | Action | Refer to |
|---|---|---|---|---|---|
| 1 | Undefined paper | The printer failed to detect the media. | (1) Check the operation of the P_EDGE sensor via “Test:Sensor” of the self-diagnostic function. | • If the sensor responds to the presence of the paper, adjust the sensor volume.<br>• If the sensor does not respond to the presence of the paper, replace the P_EDGE sensor assembly | → Media sensor sensitivity adjustment<br>→ Replacing the P_EDGE sensor assembly. |
| | | | (2) Make sure the P_EDGE sensor assembly connector at the cursor is securely connected. | • Securely connect it to CR board assembly connector J234. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| | | | (3) Make sure the R_REAR sensor assembly cables nderneath paper guide R are securely connected. | • Securely connect the cables to Mainboard assembly connectors J128 and J129. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| | | | (4) Check the CR tape power cables for skewed insertion. | • Redo the connections of the following connectors :<br>• CR board : J201 – J216<br>• Mainboard : J137 – J152 | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| | | | (5) The CR tape power cables may be damaged. | • Replace the CR tape power cables. | → Replacing the steel bearer, tube guide, CR tape power cable and ink tube. |

| | | | | | |
|---|---|---|---|---|---|
| | | | (6) The CR board assembly may be damaged. | • Replace the CR board assembly. | → Replacing the CR board assembly. |
| | | | (7) The Mainboard assembly may be damaged. | • Replace the Mainboard assembly. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| 2 | Paper Slant | The paper is fed askew. | (1) Reset the paper and check if the condition recurs. | • If this is caused by incorrect paper setup, explain the correct paper setup procedure. | - |
| 3 | Paper Cut Error | Even though cutting operation was performed, the paper was not completely cut and removed. | (1) Check the cutter grooves for accumulated paper dust and slip. | • Remove the accumulated paper dust along the direction of the grooves. | → Please refer to the User's Guide. |
| | | | (2) has the cutter cap securely been installed? | • Reset the cutter cap securely | → Please refer to the User's Guide. |
| | | | (3) Check the cutter's up and down sliding operation. | • If it does not rise : Go to step (4)<br>• If it rises : Go to step (5) | |
| | | | (4) Check if the cutter drops to the bottom end under its own weight when the cutter has been installed without the cutter spring. | •If it drops : The cutter spring may have a problem. Replace the cutter spring while referring to the unfolded view.<br>• If it does not drop : The cutter may have a problem. Replace the cutter. If the cutter does not drop after replaced, replace the cutter holder. | → Replacing the cutter holder, cutter spring, cutter cap, solenoid assembly and solenoid spring. |

| | | | | | |
|---|---|---|---|---|---|
| | | | (5) Check the up and down operation of the solenoid via "Life/Cutter" of the self-diagnostic function.<br>a) The solenoid moves up and down : Check the cutter's down position relative to the cutter groove.<br>b) It does not move up and down. | OK :<br>The cutter's service life is reached or it is damaged.<br>Replace the cutter.<br>NG :<br>Adjust the position of the cutter holder.<br>• The connectors may have poor contacts.<br>Check the connections of the following connectors :<br>CR board : J235<br>CR board : J201 – J216<br>Mainboard : J137 – J152 | → Please refer to the User's Guide<br>→ Cutter adjustment<br>→ Replacing the CR board assembly.<br>→ Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| | | | (6) Open CR cable, faulty solenoid assembly, faulty board assembly, etc., may be the cause. | •Replace the CR tape power cables.<br>• Replace the solenoid assembly<br>• Replace the CR board assembly<br>• Replace the Mainboard assembly. | → Replacing the steel bearer, tube guide, CR tape power cable and ink tube.<br>→ Replacing the cutter holder, cutter spring, cutter cap, solenoid assembly and solenoid spring<br>→ Replacing the CR board assembly<br>→ Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| 4 | End of Roll | Displayed when the end of the roll paper is detected during the use of roll paper. This is released when the lever has | (1) Check if the message is still displayed after turning the power off and then back on again. | If the message is displayed : go to step (2) | |

| | | | | | |
|---|---|---|---|---|---|
| | | been set to the up position. | (2) Check the P_REAR sensor assembly for the contact condition. | •Redo the connections of Mainboard assembly connectors J128 and J129. If the paper is not initialized, the sensor may be damaged.<br>• Replace the P_REAR sensor assembly. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly.<br>→ Replacing the P_REAR_R sensor assembly and P_REAR_L sensor assembly. |
| | | | (3) The Mainboard may be damaged. | • Replace the Mainboard assembly. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| 5<br><br><br><br>6 | [ ] Near End<br><br><br><br>[ ] Ink End | The remaining amount of ink is low. Printing is still possible.<br><br>There is no more ink left. Printing in progress is interrupted immediately. | (1) Check the ink end via "Test:Sensor" of the self-diagnostic function. | • Operate the lever at the end detecting element of the ink sensor assembly to check if the ink end indication changes. (At this time, the sensor for detecting the presence of cartridges is set to Yes.)<br>If there is no response, replace the ink sensor assembly. | → Sensor menu<br>→ Replacing the I/H (ink holder) assembly |
| | | | (2) Check the ink sensor connector for the contact conditions. | • Redo the connections of the following connectors.<br>• Junction board : J401 – J418<br>• Mainboard : J133 – J134 | → Replacing the Junction board assembly. |
| 7 | Not Original Ink | | (1) Check the ink end ID via "Test:Sensor" of the self-diagnostic function. (This is limited to when smart chips are set.) | • If the type of the installed cartridge does not match the displayed type, the ink ID sensor may be damaged. | → Sensor menu |

| | | | | | |
|---|---|---|---|---|---|
| | | | (2) Check the ink ID sensor connector for the contact conditions. | • Redo the connections of the following connectors :<br>• Junction board : J401 – J418<br>• Mainboard : J133 – J134 | → Replacing the JUNCTION board assembly. |
| | | | (3) The Mainboard may be damaged. | • Replace the Mainboard assembly. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| 8 | Warning Waste INK Tank | The waste tank will soon be full. | (1) Check if the message is still displayed after turning the power off and then back on again. | • When a message is displayed : Go to step (2) | - |
| | | | (2) The amount of waste ink inside the tank reached the specified level. | • Dispose of the waste ink in the waste bottle. | - |
| | | | (3) If initialization does take effect when the waste ink is disposed of and waste ink history is initialized, the Mainboard may be damaged. | • Replace the Mainboard assembly. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| 9 | Warning Waste INK Tank | The service life of the ink tube will soon be reached. | (1) Check if the message is still displayed after turning the power off and then back on again. | • When a message is displayed : Go to step (2) | - |
| | | | (2) The number of times the ink tube was used reached the maximum allowable times. | • Replace the ink tube.<br>• Initializing CR motor history. | → Replacing the steel bearer, tube guide, CR tape power cable and ink tube. |
| | | | (3) If initialization does take effect when the CR motor history is initialized after the ink tube is replaced, the Mainboard may be damaged. | • Replace the Mainboard assembly. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |

| | | | | | |
|---|---|---|---|---|---|
| 10 | (Warning Head Life) | The service life of the print head will soon be reached. | (1) Check if the message is still displayed after turning the power off and then back on again. | • When a message is displayed : refer to step (2) | |
| | | | (2) The number of times the print head was used reached the maximum allowable times. | • Replace the print head assembly.<br>• Initialize the head unit. | → Replacing the print head assembly and head tape power cable.<br>→ Counter initialization menu. |
| | | | (3) If initialization does not take effect when the head unit is initialized, the Mainboard assembly may be damaged. | • Replace the Mainboard assembly. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly |
| 11 | Hard disk status conect error | There is a problem in the hard disk connections. | (1) Check the connections of connectors. | • Redo the connections of the following connectors.<br>• Mainboard : J102<br>• power source board (small) assembly : CN51 – CN52 | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly.<br>→ Replacing the power source board assembly. |
| | | | (2) The HDD_MOTHER board assembly may be damaged. | • Replace the ink tube.<br>• Initializing CR motor history. | |
| | | | (3) Hard disk may be damaged. | • Replace the hard disks. | |
| | | | (4) The Mainboard assembly may be damaged. | • Replace the Mainboard assembly. | |
| 12 | Network initialize error | There is a problem in the network board. | (1) The PCI_LINUX board assembly may be damaged. | • Replace the PCI_LINUX board assembly. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| | | | (2) The Mainboard assembly may be damaged. | • Replace the Mainboard assembly. | |
| 13 | Waste ink tank sts. No | The waste tank is not installed. | (1) Check if the waste bottle has been installed. | • Install the waste bottle correctly. | - |

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|---|---|---|---|---|---|
| | | | (2) Check the operation of the waste box sensor assembly via "Sensor/Waste Bin" of the self-diagnostic function. | • Replace the waste box sensor assembly. | - |
| | | | (3) Check the connections of the connectors. | •Check if the waste box sensor connectors are connected to the rear side cap R.<br>• Redo the connections of the following connectors.<br>• Mainboard : J120 | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| | | | (4) The Mainboard assembly may be damaged. | • Replace the Mainboard assembly. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |

Notes :

- The number between brackets [ ] on the error display indicates the cartridge number.

## *9.2.3. Heating system error*

The following explains the messages, items to be confirmed and remedies to take when errors handling heating system occur while the product is operating.
Heating system errors are displayed when communication trouble occurs between the heater strips and this product.
If heating system error occurs, the following error messages are displayed and the printer stops.
Solve the problem to delete the error message and restart the printer.

| No | Message | Check point | Action |
|---|---|---|---|
| 1 | AC not present | AC connector. | Check AC connector |
| 2 | Error sensors A | Sensors A | Check if the sensors are connected properly. |
| 3 | Error sensor A | Sensor A | Check if the sensors are connected properly. |
| 4 | Conn. err. Left A | Sensor A | Check if the left sensor is connected properly. |
| 5 | Conn. err. Right A | Sensor A | Check if the right sensor is connected properly. |
| 6 | Error sensors D1 | Sensors D1 | Check if the sensors are connected properly. |
| 7 | Error sensor D1 | Sensor D1 | Check if the sensors are connected properly. |
| 8 | Conn. err. Left D1 | Sensor D1 | Check if the left sensor is connected properly. |
| 9 | Conn. err. Right D1 | Sensor D1 | Check if the right sensor is connected properly. |
| 10 | Error sensors D2 | Sensors D2 | Check if the sensors are connected properly. |
| 11 | Error sensor D2 | Sensor D2 | Check if the sensors are connected properly. |
| 12 | Conn. err. Left D2 | Sensor D2 | Check if the left sensor is connected properly. |
| 13 | Conn. err. Right D2 | Sensor D2 | Check if the right sensor is connected properly. |
| 14 | Couldn't reach temp | Heater strip | After 10 minutes, temperature is not reached. Check the heater strips. |
| 15 | Err: Temp > 85°C! | Heater strip | Temperature comes higher then the limit. Check the heater strips. |
| 16 | Connection err. A | Rear Heater (A) | Check the connector of the rear heater. |
| 17 | Connection err. D1 | Dryer (D1) | Check the connector of the front heater (D1). |
| 18 | Connection err. D2 | Dryer (D2) | Check the connector of the front heater (D2). |
| 19 | Error sensor B1 | Fixer (B1) | Check the sensor of the fixer 1 (B1). |
| 20 | Error sensor C | Post fixer (C) | Check the sensor of the fixer (C). |
| 21 | Connection err. B1 | Fixer (B1) | Check the connector of the fixer 1 (B1). |
| 22 | Connection err. C | Post fixer (C) | Check the connector of the post fixer (c). |
| 23 | Error sensor B2 | Fixer (B2) | Check the sensor of the fixer 2 (B2) |
| 24 | Connection err. B2 | Fixer (B2) | Check the connector of the fixer 2 (B2). |
| 25 | Error D group | Heaters D | Temperature difference higher then 15°C between the sensors of the D heaters. |
| 26 | Error A group | Heaters A | Temperature difference higher then 15°C between the sensors of the A heaters. |
| 27 | Error B group | Heaters B | Temperature difference higher then 15°C between the sensors of the B heaters. |

**Important :**

Before checking the connectors, please power off the unit and remove the power cable.

Notes :

- Check if the connectors are properly connected to the power board.
- Check if the sensors are connected onto the right connector.

## *9.2.4. Data error*

The following explains the messages, items to be confirmed and remedies to take when data errors occur while the product is operating.
Data errors are displayed when data communication trouble occurs between the computer and this product.
If data error display occurs, the following error messages are displayed and the printer stops.
Solve the problem to delete the error message and restart the printer.

| No. | Message | Phenomenon | Check point | Action | Refer to |
|---|---|---|---|---|---|
| 1 | I 15-1 error command [ ] | Online frame error | (1) Check the printing data for contents that may be judges as an error.<br><br>(2) Mainboard assembly may be defective? | • Try a different drive for the application.<br>• Replace Mainboard assembly | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| 2 | I 15-2 error command [ ] | Overrun error | | | |
| 3 | I 15-3 error command [ ] | Online parity error | | | |
| 4 | I 15-4 error command [ ] | Sum check error | | | |
| 5 | I 15-5 error command [ ] | ESC parameter | | | |
| 6 | I 15-6 error command [ ] | Undefined ESC | | | |
| 7 | I 15-7 error command [ ] | Incorrect letters ESC | | | |
| 8 | I 15-8 error command [ ] | Numeral character ESC | | | |
| 9 | I 15-9 error command [ ] | Parameter error ESC | | | |
| 10 | I 15-10 error command [ ] | Buffer overflow | | | |

Notes :

- The command codes for errors may be indicated between brackets [ ].

## *9.2.5. Command errors*

The following explains the messages, items to be confirmed and remedies to take when command errors occur while the product is operating.
Command errors are displayed when trouble occurs during analysis of the command data that is sent to this product from the computer.
If a command error occurs, the following error messages are displayed and the printer stops.
Solve the problem to delete the error message and restart the printer.

| No. | Message | Phenomenon | Check point | Action | Refer to |
|---|---|---|---|---|---|
| 1 | MH01 error command [ ] | Undefined ESC: A command that has not been defined in command modes was analyzed. | (1) Check the printing data for contents that may be judged as an error.<br>(2) The Mainboard assembly may have a problem. | • Try a different drive for the application<br>• Replace Mainboard assembly | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| 2 | MH02 error command [ ] | Parameter error : Number of parameters following command is incorrect. | | | |
| 3 | MHO3 error command [ ] | Numeric error : Number of parameters following command is incorrect. | | | |
| 4 | MH04 error command [ ] | Undefined letter set: Letter sets that should not exist (do exist). | | | |
| 5 | MH05 error command [ ] | Buffer overflow: Polygon buffer or downloadable character buffer overflows. | | | |

Notes :

- The command codes for errors may be indicated between brackets [ ].
- For the settings on a computer, refer to the computer's operation manual.

## 9.2.6. Errors requiring restart

The following explains the messages, items to be confirmed and remedies to take when errors requiring restart occur while the product is operating.
Errors requiring restart are displayed when trouble critical to the operation of this product occurs.

- Foreign material disturbing the printer operation has been loaded in the printer.
- An electrical circuit (such as board, motor or sensor) failure has occurred.
- An error on control program of the printer has occurred.
- When errors requiring restart occur.

The product stops operation after the following actions take place.

1. The power supply to the operation has been automatically shut-off.

2. All lamps on the operation panel flash and the buzzer sounds intermittently.

3. Error messages are displayed on the operation panel.

If an error requiring a restart has occurred, solve the problems to restart the printer and delete the error.

### (1) CPU system critical errors

| No. | Message | Phenomenon | Check point | Action | Refer to |
|---|---|---|---|---|---|
| 1 | E 001 error DRAM | Standard DRAM error : Abnormal condition in standard memory mounted on Mainboard assembly | (1) Mainboard assembly may be defective. | • Replace Mainboard assembly | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| 2 | E 002 error Opt. DRAM | Option DRAM error : Abnormal condition in optional memory mounted on Mainboard assembly | (1) If foreign material is present in the slot (J103) of the extended memory, errors may result. | • Remove dust using a tool such as air duster, then reinstall the memory. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| | | | (2) Install known good optional memory (the capacity must be equal to the one in the user's unit) then check the equipped memory capacity via "Test:Ram Capacity" of the self-diagnostic function. | • Replace memory. | |
| | | | (3) Mainboard assembly may be defective. | • Replace Mainboard assembly | |

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| 3 | E 016 error CPU Err [00] | Interruption exception error: Trouble occurred in the interrupt process | (1) Check the AC power source and the printer peripheral devices(2) Check if the error recurs. If not, check by powering-up the product several times.<br>(3) The Mainboard assembly may have a problem. | • Replace Mainboard assembly | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| 4 | E 016 error CPU Err [02] | Command boundary exeption errors: Trouble occured in the command boundary. | | | |
| 5 | E 016 error CPU Err [03] | Data boundary exception errors : Trouble occurred in the data boundary. | | | |
| 6 | E 016 error CPU Err [04] | Address exception error (load or command fetch): Address error occurred while loading or fetching commands. | | | |
| 7 | E 016 error CPU Err [05] | Address exception error (store) : Address errors occurred while saving. | | | |
| 8 | E 016 error CPU Err [06] | Address exception error (command fetch): Address errors occurred while loading or storing commands | | | |
| 9 | E 016 error CPU Err [07] | Bus exception errors (Loading and storing): buss errors occurred while loading and storing commands | | | |
| 10 | E 016 error CPU Err [08] | System call exception errors: System call trouble occurred. | | | |
| 11 | E 016 error CPU Err [09] | Break point exception error: trouble occurred in the break points. | | | |
| 12 | E 016 error CPU Err [10] | Reservation command exception errors: trouble occurred in the reservation commands. | | | |
| 13 | E 016 error CPU Err [03] | Disable co-processor exception errors: trouble occurred in the co-processor. | | | |

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|---|---|---|---|---|---|
| 14 | E 016 error CPU Err [12] | Calculation overflow exception errors: overflows occurred. | | | |
| 15 | E 016 error CPU Err [13] | Trap exception errors : trap occurred | | | |
| 16 | E 016 error CPU Err [15] | Floating point exception error : trouble occurred in the floating points | | | |
| 17 | E 016 error CPU Err [22] | Watch exception error : trouble occurred in the watch. | | | |
| 18 | E 016 error CPU Err [32] | Watch dog timeout exception error : watch dog time out occurred. | | | |
| 19 | E 016 error CPU Err [33] | Abort error : Aborts occurred | | | |

Notes :

- For the settings on a computer, refer to the computer's operation manual.

### *(2) Mechanical system critical errors*

| No. | Message | Phenomenon | Check point | Action | Refer to |
|---|---|---|---|---|---|
| 1 | E065 error PF motor | Trouble occurred in the PF motor (X-axis) during operation. Displayed when the motor commended value and feedback from the encoder are significantly different. | (1) Check error history from “Test: history” of self-diagnosis function. | | → History menu |
| 2 | E067 error Paper feed encoder | Trouble occurred on paper travel (x-axis) during operation. Displayed when there is no feedback from the encoder. | (2) Set endurance running cycles to 50 or more from “Life: PF motor “ of self-diagnosis function and check if X-axis motor error is issued. | • Check connection of following connectors in Mainboard assembly:<br>→ PF motor cable assembly connector J157<br>→ PF_ENC assembly connector J154 | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |

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| 3 | E069 error Paper feed timeout | Timeout occurred on paper travel (X-axis) during operation. Displayed when the pressure roller has not reached the commanded position. | (3) Check "Encoder:PF" under "Test:Encoder" of self-diagnosis function. | | → Encoder Menu |
| 4 | E071 error PF overcurrent | An overload occurred in the PF motor (X-axis) during operation. | (4) PF motor assembly may be damaged.<br>(5) Mainboard assembly may be damaged. | • Replace PF motor assembly<br>• Replace Mainboard assembly | → Replacing PF Motor Assembly<br>→ Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| 5 | E 066 Error CR Motor | Trouble occurred in the CF motor (Y-axis) during operation. Displayed when the motor commanded value and feedback from the encoder are significantly different. | (1) Check the trouble history via "Test:Record" of the self-diagnostic function | - | → History Menu |
| 6 | E 068 Error CR Encoder | Trouble occurred in the head travel (Y-axis) during operation. Displayed when there is no feedback from the encoder. | (2) With the power supply off, move the carriage side to side to check for jamming.<br><br>→ Refer to Error E072 | • Clean and lubricate the rollers of the CR rail. | → Lubrication / Bonding |

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| 7 | E 070 Error CR Timeout Err | Time out occurred in the head travel (Y-axis) during operation. Displayed when he carriage has not reached the commanded position. | (3) Check if “CR Motor Error” occurs by setting the durability cycles at 50 over larger via “Life: CR Motor” of the self-diagnostic function. | • Check he connections of the following connectors. Mainboard assembly<br>• CR motor assembly connector : J158<br>• CR tape power cable connectors : J137 – J152 CR Board assembly<br>• CR tape power cable connectors : J201 – J216<br>• CR_ENC assembly connector : J233 | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| | | | (4) Check the T-fence for contamination, flows and bends. | • If contaminated with grease and dust, wipe off with a dry cloth.<br>• If contaminated with ink, wipe off with a lightly damp cloth and then with a dry cloth.<br>• If contamination is severe, replace the T fence.<br>a) If NG :<br>Check the cable connections at the following locations<br>• CR board assembly connector J233<br>b) Replace the following parts<br>• T fence<br>• CR motor assembly<br>• CR BASE board assembly<br>• CR tape power cables | → Replacing the T fence |

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| | | | (5) Check the "Encoder:CR" via "Test/Encoder" of the self-diagnostic functions. | • Replace the Mainboard assembly<br>Make sure that the connections of the Mainboard assembly connector J155 / J156 are good and check the operation of the cover sensor via "Test/Sensor" of the self-diagnostic function. | → Replacing the CR motor assembly.<br>→ Replacing the CR board assembly<br>→ Replacing the steel bearer, tube guide, CR tape power cable and ink tube. |
| 8 | E 072 Error CR OverCurrent | An overload occurred in the CR motor (Y-axis) during operation. | (6) The Mainboard assembly may have a problem.<br><br>→ Error E068 occurs if Mainboard assembly connector J155/COVER-R or J156/COVER-L is not connected. | • Replace the Mainboard assembly.<br>• Make sure that the connections of the Mainboard assembly connector J155 / J156 are good and check the operation of the cover sensor via "Test:sensor" of the self-diagnostic function. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| 9 | E 073 Error CR Origin | CR_HP cannot be detected. | (1) Check the transmission photosensor for CR home position detection via "Test:Sensor" of the self-diagnostic function. | • Check the connections of the transmission photosensor for CR home position detection. | → Sensor Menu |
| | | | (2) The transmission photosensor for CR home position detection may be damaged. | • Replace the transmission photosensor for the CR home position detection. | → Replacing the transmission photosensor. |
| | | | (3) The Mainboard assembly may have a problem. | • Replace the Mainboard assembly. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |

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| 10 | E 074 Error Cover | Trouble occurred in the cover sensor. | (1) Check the cover sensor via “Test/Sensor” of the self-diagnostic function. | • Make sure that the connection of the cover sensor assembly is good.<br>• Mainboard : J155 – J156 | → Sensor Menu |
| | | | (2) The cover sensor assembly may be damaged. | • Replace the cover sensor assembly. | → Replace the cover R sensor assembly and the cover L sensor assembly. |
| | | | (3) The Mainboard assembly may have a problem. | • Replace the Mainboard assembly. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| 11 | E 075 Error Head OverCurrent | Trouble occurred during printer operation due to an overload of the print head. | (1) Make sure that the connections of the head tape power cables are good. | •Redo the connections of the following connectors.<br>• CR board : J217 – J232<br>• Reset the head error | → Replacing the CR board assembly.<br>→ Counter initialization menu |
| | | | (2) Make sure that the connections of the CR tape power cables are good. | •Redo the connections of the following connectors.<br>• CR board : J201 – J216<br>• Reset the head error | → Replacing the CR board assembly<br>→ Counter initialization menu |
| | | | (3) The print head may be damaged. | •Replace the print head assembly | → Replacing the print head assembly and head tape power cable.<br>→ Counter initialization menu |
| | | | (4) The CR board assembly may be damaged. | • Replace the CR board assembly<br>• Reset the head error | → Replacing the CR board assembly<br>→ Counter initialization menu |

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| | | | (5) The Mainboard assembly may have a problem | • Replace the Mainboard assembly<br>• Reset the head error | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly.<br>→ Counter initialization menu |
| 12 | E 076 Error PG CR origin | The HD_SLIDE home position cannot be detected. | (1) Check the HD_SLIDE sensor via "Sensor/HD_SLIDE" of the self-diagnostic function | • Make sure that the connections of the HD_SLIDE sensor assembly connectors are good.<br>• Mainboard : J127 | → Sensor Menu |
| | | | (2) Make sure that the connections of the HD_SLIDE sensor assembly connectors are good. | • Replace the HD_SLIDE sensor assembly. | → Replacing the SLIDE motor assembly, HD_SLIDE sensor assembly and slide motor installation board. |
| | | | (3) The SLIDE motor assembly may be damaged. | • Replace the SLIDE motor assembly. | → Replacing the SLIDE motor assembly, HD_SLIDE sensor assembly and slide motor installation board. |
| | | | (4) The Mainboard assembly may have a problem. | • Replace the Mainboard assembly. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| 13 | E 077 Error Head OverHeat | Trouble occurred in the head driver. | (1) The HEAD_DRV board assembly may have a problem. | • Replace the HEDA_DRV board assembly. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |

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| | | | (2) The Mainboard assembly may have a problem | • Replace the Mainboard assembly | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| 14 | E 078 Error Head Cable | Trouble occurred in the head cable or head thermister. | (1) Make sure that the connections of the head tape power cables are good. | •Redo the connections of the following connectors.<br>• CR board : J217 – J232 | → Replacing the CR board assembly |
| | | | (2) Make sure that the connections of the CR tape power cables are good. | •Redo the connections of the following connectors.<br>• CR board : J201-J216 | → Replacing the CR board assembly |
| | | | (3) The print head assembly may be damaged | • Replace the print head assembly. | → Replacing the print head assembly and head tape power cable.<br>→ Counter initialization menu |
| | | | (4) The CR board assembly may be damaged. | • Replace the CR board assembly. | → Replacing the CR board assembly |
| | | | (5) The Mainboard assembly may have a problem. | • Replace the Mainboard assembly. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| 15 | E 079 Error Lever OverCurrent | An overload occurred in the lever motor during operation. | (1) The lever motor may be damaged. | • Replace the lever motor. | → Replacing the lever motor assembly and the arm motor installation board. |
| | | | (2) The Mainboard assembly may have a problem. | • Replace the Mainboard assembly. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |

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| 16 | E 080 Error Lever Sensor | Trouble occurred in the lever sensor. | (1) Check the operation of the transmission photosensor for the lever up/ down via “Check:sensor “ of the self-diagnostic function. | • Replace the transmission photosensor at the lever. | → Replacing the transmission photosensor. |
| | | | (2) Is the transmission photosensor at the lever motor securely installed? | • If the transmission photosensor is detached, fix it securely. | → Replacing the transmission photosensor. |
| | | | (3) Is the sensor element of the transmission photosensor at the lever motor contaminated? | • Clean the sensor element using cotton swabs. | → Replacing the transmission photosensor. |
| | | | (4) Is the transmission photosensor cable at the lever motor securely installed? | • Securely connect the cable for the transmission photosensor cable to Mainboard assembly connectors J123 and J124. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| | | | (5) The Mainboard assembly may have a problem. | • Replace the Mainboard assembly. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly.<br>→ Counter Initialization Menu. |
| 17 | E 081 Error Cap Sensor. | Trouble occurred in the cap sensor. | (1) Check the operation of the transmission photosensor at the cap via “Sensor: Head Lock” of the self-diagnostic function. | • Replace the transmission photosensor at the cap. | → Replacing the transmission photosensor. |
| | | | (2) Is the transmission photosensor at the cap securely installed? | • If the transmission photosensor is detached, fix it securely. | → Replacing the transmission photosensor. |

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|---|---|---|---|---|---|
| | | | (3) Is the sensor element of the transmission photosensor at the cap contaminated? | • Clean the sensor element using cotton swabs. | → Replacing the transmission photosensor. |
| | | | (4) Is the transmission photosensor cable at the lever motor securely installed? | • Securely connect the cable for the transmission photosensor cable to Mainboard assembly connectors J123 and J124. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| | | | (5) Make sure that the connections of the SLIDE motor assembly for maintenance U/D are good. | • Replace the SLIDE motor assembly for the maintenance U/D. | → Replacing the SLIDE motor assembly (wiper arm). |
| | | | (6) The Mainboard assembly may be damaged. | • Replace the Mainboard assembly. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| 18 | E 082 Error Wiper Sensor | Trouble occurred in the wiper sensor. | (1) Check the up/down operation of he cap (wiper) via “Sensor:Head Lock” of the self-diagnistic function. | • Replace the transmission photosensor at the wiper. | → Replacing the transmission photosensor. |
| | | | (2) Is the transmission photosensor at the wiper up/down area securely installed? | • If the transmission photosensor is detached, fix it securely. | → Replacing the transmission photosensor. |
| | | | (3) Is the sensor element of the transmission photosensor contaminated? | • Clean the sensor element using cotton swabs. | → Replacing the transmission photosensor. |
| | | | (4) Is the transmission photosensor cable securely connected? | • Securely connect the cable for the transmission photosensor cable to Mainboard assembly connector J131. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |

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| | | | (5) Make sure that the connections of the SLIDE motor assembly for the WIPER slide are good. | • Replace the SLIDE motor assembly for the wiper SLIDE. | → Replacing the SLIDE motor assembly (wiper arm). |
| | | | (6) The Mainboard assembly may be damaged. | • Replace the Mainboard assembly. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |

# 9.3. TROUBLESHOOTING PROCEDURES WHEN ERRORS ARE NOT DISPLAYED

The following explains the messages, items to be confirmed and remedies to take when error messages are not displayed

## *9.3.1. Problems relating to initial operation*

This chapter explains the messages displayed, the items to be confirmed and the remedy.

| No. | Phenomenon | Check point | Action | Refer to |
|---|---|---|---|---|
| 1 | Power is not supplied. | (1) Check the panel unit assembly cables for open or shorted conditions. | • Replace the panel cables. | → Removing the panel unit assembly. |
| | | (2) Make sure that the connections of the power supply board and Mainboard assembly are good. | • Redo the connections of the following connectors.<br>• Mainboard : J101<br>• power source board : CN2/CN4 | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| | | (3) Make sure that the connections of the inlet board assembly are good. | • Redo the connections of the following connectors.<br>• Inlet board : CN1-CN3 | → Replacing the inlet assembly, inlet board assembly and lever foot SW cable assembly. |
| | | (4) The panel board assembly may be damaged. | • Replace the panel board assembly. | → Removing the panel unit assembly. |
| | | (5) The Mainboard assembly may have a problem. | • Replace the Mainboard assembly. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| | | (6) The power supply board assembly may have a problem. | • Replace the power supply board assembly.1 | → Replacing the power source board assembly. |

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|---|---|---|---|---|
| 2 | LCD failure (no display / garbled display) | (1) Check if the DIMM (optional memory) is installed. | • The internal programs cannot be started without the DIMM installed in the product. Make sure to install the one in the specifications. If not installed, nothing will be displayed on the LCD and all LEDs will flash. | → User's Guide |
| | | (2) Make sure that the connections of the panel cable connectors at the panel side and the Mainboard assembly side is good.<br>• Check the panel cables for skewed insertion.<br>• Make sure that they are securely locked. | • Redo the connections of the following connectors.<br>• Mainboard : J109<br>• Panel board : J301 | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly.→ Removing the panel unit assembly. |
| | | (3) The DIMM (optional memory) may be damaged. | • Replace the DIMM (optional memory) | → User's Guide |
| | | (4) The panel cables may be damaged. | • Replace the panel cables. | → Removing the panel unit assembly. |
| | | (5) Check the panel unit assembly LCD for damages. | • Replace the panel board assembly. | → Removing the panel unit assy. |
| | | (6) The Mainboard assembly may have a problem. | • Replace the Mainboard assembly. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| 3 | Ink replenishment cannot be performed. | (1) Check if "Cover Open" is displayed on the LCD when the front cover is closed. | • Adjust the cover sensor. | → Cover sensor adjustment. |

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| | | (2) Make sure that the connections of the panel cable connectors at the panel unit assembly side and the Mainboard assembly side is good.<br>• Check the panel cables for skewed insertion.<br>• Make sure that they are securely locked. | •Redo the connections of the following connectors.<br>• Mainboard : J105<br>• Panel board : J301 | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| | | (3) Check if “leverUp” is displayed on the LCD when the pressure arm is at the lower position. | • Replace the transmission photosensor at the lever. | → Replacing the transmission photosensor. |
| | | (4) The ink ID board assembly may be damaged. | • Replace the ink ID board assembly. | → Replacing the I.H (ink holder) assembly |
| | | (5) The JUNCTION board assembly may be damaged. | • Replace the JUNCTION board assembly. | → Replacing the JUNCTION board assembly. |
| | | (6) The Mainboard assembly may have a problem. | • Replace the Mainboard assembly. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| 4 | Although ink replenishment has started, the ink has not reached the head. | (1) The ink pump assembly may have a problem. | • Replace the ink pump assembly. | → Replacing the pump assembly. |
| | | (2) The maintenance parts may be damaged. | Replace the maintenance assembly. | → Replacing the maintenance assembly. |
| | | (3) The damper may be damaged. | • Replace the damper. | → Replacing the H ink tube, tube branch and damper assembly. |
| | | (4) The ink tube may be damaged. | • Replace the ink tube. | → Replacing the steel bearer, tube guide, CR tape power cable and ink tube. |
| | | (5) The cartridge frame may be damaged. | • Replace the cartridge frame assembly. | → Replacing the I/H (ink holder) assembly. |

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| 5 | Ink is not supplied when ink replenishment is complete. | (1) Make sure that the connections of the head cable connectors at the CR board assembly side and the print head side is good.<br>• Check the head cables for open conditions.<br>• Make sure that they are securely connected. | • Redo the connections of the head cables to the connectors. | → Replacing the CR board assembly. |
| | | (2) Check the head cables for the open conditions. | • Replace the head cables. | → Replacing the print head assembly and head tape power cable. |
| | | (3) The print head may be damaged. | • Replace the print head assembly. | → Replacing the print head assembly and head tape power cable. |
| | | (4) Check the CR cables for open conditions. | • Replace the CR tape power cables. | → Replacing the steel bearer, tube guide, CR tape power cable and ink tube. |
| | | (5) The HEAD_DRV board assembly may have a problem. | • Replace the HEAD_DRV board assembly. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| | | (6) The Mainboard assembly may have a problem | • Replace the Mainboard . | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| 6 | Operation does not take place at all after the power is supplied. | (1) Check if “Cover Open” is displayed on the LCD when the front cover is closed.<br>Check the proper operation of the cover sensory assembly via | •Adjust the cover sensor.<br>• Redo the connections of connectors J155 and J156 on the Mainboard assembly.<br>• Replace he cover | → Cover sensor adjustment<br>→ Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and |
| 7 | When power is supplied, “Initialize” is displayed, then reset. | | | |
| 8 | Initialization does not take place even if the paper is set. | | | |

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| 9 | Operation does not take place even if the front cover is closed. | "TEST:Sensor" of the self-diagnostic function. | sensor assembly. | cooling fan assembly.→ Replace the cover R sensor assembly and the cover L sensor assembly. |
| 10 | Operation does not stop even if the front cover is opened. | (2) Panel unit Make sure that the connections of the panel cable connectors at the assembly side and the Mainboard assembly side are good.<br>• Check the panel cables for skewed insertion.<br>• Make sure that they are securely locked. | • Redo the connections of the following connectors.<br>• Mainboard : J105<br>• Panel unit : J301 | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| | | (3) Check if "Set Paper" is displayed on the LCD when the pressure arm is at the lower position. | • Redo the connections of Mainboard assembly connectors J123 and J124.<br>• Replace the transmission photosensor at the lever. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly.→ Replacing the transmission photosensor. |
| | | (4) Check if the detection function of the P_REAR sensor assembly is proper via "Test:Sensor" of the self-diagnostic function. | • Redo the connections of Mainboard assembly connectors J128 and J129.<br>• Replace the P_REAR sensor assembly. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly.→ Replacing the P_REAR_R sensor and P_REAR_L sensor assembly |
| | | (5) The Mainboard assembly may have a problem. | • Replace the Mainboard assembly. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |

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| 11 | Key inputs via operation panel are disabled. | (1) Check the operation panel cover for breakage and contamination. | • Replace the operation panel cover. | - |
| | | (2) Make sure that the connections of the panel cable connectors at the panel unit assembly side and the Mainboard assembly side is good.<br>• Check the panel cables for skewed insertion.<br>• Make sure that they are securely locked. | • Check the connections of the following connectors.<br>• Mainboard : J105<br>• Panel board : J301 | → Replacing the Mainboard assembly, HDD_extension board assembly, HEAD_DRV board assembly and cooling fan assembly.Þ |
| | | (3) The panel unit assembly may be damaged. | • Replace the panel board assembly. | → Removing the panel unit assembly. |
| | | (4) The Mainboard assembly may have a problem. | • Replace the Mainboard assembly. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| 12 | Printing does not start even if data is received. | (1) Refer to “Problems relating to online and functions”. | - | → Problems relating to online and functions. |

## 9.3.2. Problems relating to paper feed

| No. | Phenomenon | Check point | Action | Refer to |
|---|---|---|---|---|
| 1 | The paper comes off at paper set initialization or during the printing operation. | (1) Check if the P_REAR sensor assembly and P_EDGE sensor assembly are operating correctly via "Test:Sensor" of the self-diagnostic function | • Check if the connections of the following connectors.<br>• Mainboard assembly : J128/J129, J137-J152<br>• CR board : J201-J261<br>• Adjust the sensitivity of the P_EDGE sensor<br>• Replace the P_REAR sensor assembly and P_EDGE sensor assembly | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly.<br>→ Replacing the CR board assembly<br>→ media sensor sensitivity adjustment<br>→ Replacing the P_REAR_R sensor and P_REAR_L sensor assembly→ Replacing the P_EDGE sensor assembly. |
| 2 | The paper is fed askew or meanderingly at paper set initialization or during the printing operation. | (2) Check the platen for contamination by paper dust and ink. | • If the platen is contaminated by ink or paper dust, wipe off with a damped soft cloth. | → User's Guide |
| 3 | The paper is wrinkled at paper set initialization or during the printing operation. | (3) Check the rotation of pressure roller with the pressure arm at the raised position. | • If the surrounding area of the pressure roller is contaminated by paper dust and waste paper, wipe off with a damped soft cloth. | → User's Guide |
| 4 | The paper jams up at paper set initialization or during the printing operation. | (4) Check paper guide F for significant deformation, flaws, foreign material, etc. | • If foreign materials such as wastepaper are found on the paper guide F, remove them.<br>• Replace the paper guide F. | → Removing media guide F. |
| 5 | After the paper set initialization, the paper size is detected incorrectly. | (5) Is the flange properly installed? | • Securely insert flanges into the paper tube for the roll paper. | → User's Guide |
| | | (6) Check the rollers of the paper receiver for flaws and wear that may hinder the rotation of the scroller. | • Replace the rollers of the scroller. | → Replacing the scroller R assembly.<br>→ Replacing the scroller L assembly. |

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| | | (7) Check the scrollers for bends. | • Replace the scrollers. | → User's Guide |

## 9.3.3. Problems relating to the printing operation

| No. | Phenomenon | Check point | Action | Refer to |
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| 1 | Continuous printing cannot be performed. | (1) The program ROM may have failed. | • Upgrade the firmware version. | → Firmware installation. |
| | | (2) The Mainboard assembly may have a problem. | • Replace the Mainboard assembly. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| 2 | Give an extra feed after the printing operation has been completed. | (1) Check if the detection function of the P_REAR sensor assembly is correct via “Test:Sensor” of the self-diagnostic function. | • Make sure that the connections of Mainboard assembly connectors J128 – J129 are good.<br>• Replace the P_REAR sensor assembly. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly.<br>→ Replacing the P_REAR_R sensor assembly and P_REAR_L sensor assembly. |
| | | (2) Check adjustments of the top & bottom and rear sensor positions. | • Adjust the positions of the top & bottom and rear sensors. | → Top & bottom adjustment menu.<br>→ P_REAR sensor position adjustment menu. |
| | | (3) The program ROM may have failed. | • Upgrade the firmware version. | → Firmware installation |
| | | (4) The Mainboard assembly may have a problem. | • Replace the Mainboard assembly. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| 3 | Dots are missed in printing | (1) Perform the printing operation via “Print:Nozzle Check” or “Test:Print” of the self-diagnostic function. | • When the nozzle check pattern is not printed correctly : go to step 2 | → Test printing menu |

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| | | (2) Repeat head cleaning several times. | • If the condition is not restored by performing the cleaning operation, leave the product for several hours then recheck it. | → User's Guide |
| 4 | Cleaning does not fix problems such as clogging or split nozzle. | (1) Check the use conditions of the product. | • Under low humidity conditions in particular, printing is performed poorly. Check the conditions under the guaranteed operation conditions. | → Specifications |
| | | (2) Check if the conditions occur after ink replenishment. | • Printing performance is not stable immediately after ink replenishment. Leave the product for several hours then recheck it. | - |
| | | (3) Check the cleaning wipers for contamination. | • Using the provided cleaning cloth for cleaning the wipers, slightly dampen with cleaning liquid it and wipe the surface of the cleaning wipers, then recheck their condition by performing the cleaning operation.<br>• If the ink is solid and does not come off by wiping, replace the wiper. | User's Guide<br>→ Replacing the cleaner |
| | | (4) Check the installation conditions of the cleaning wipers. | • Check the installation conditions of the wipers and fix them securely. | → Replacing the cleaner. |
| | | (5) Check if the QR codes are input correctly. | • Input the correct QR codes. | → Head rank input menu. |
| | | (6) The damper may be damaged. | • Replace the damaged damper. | → Replacing the H ink tube, tube branch and damper assembly. |
| | | (7) The print head assembly may be damaged. | • Replace the damaged print head assembly. | → Replacing the print head assembly and head tape power cable. |

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| | | (8) Check if the remaining amount of ink in the cartridge is sufficient. | • If “Near End” or “Ink End” is not displayed when the remaining amount of ink is insufficient, the ink sensor assembly may have a problem. | → Replacing the I/H (inkholder) assembly. |
| | | (9) The ink pump assembly may have a problem. | • Replace the ink pump assembly. | → Replacing the pump assembly. |
| | | (10) The maintenance assembly may have a problem. | • Replace the maintenance assembly. | → Replacing the maintenance assembly |
| | | (11) The Mainboard assembly may have a problem. | • Replace the Mainboard assembly. | → Replacing the print head assembly and head tape power cable. |
| 5 | Nothing has been printed | (1) Check the head and CR cables for skewed insertion. | • Redo the connections of the following connectors. Connectors for the print head.<br>• CR board : J201 – J232<br>• Mainboard : J137 – J152 | → Replacing the print head assembly and head tape power cable.<br>→ Replacing the CR board assembly.<br>→ Replacing the print head assembly and head tape power cable. |
| 6 | Only specific colours are not printed. | (2) The head and CR cables may be damaged. | • Replace the CR tape power cables. | → Replacing the steel bearer, tube guide, CR tape power cable and ink tube. |
| | | (3) Check ink tubes for bends, flaws, air leaks, etc. | • Replace the damaged ink tubes. | → Replacing the steel bearer, tube guide, CR tape power cable and ink tube. |
| | | (4) The print head assembly may be damaged. | • Replace the print head assembly. | → Replacing the print head assembly and head tape power cable. |
| | | (5) The damper may be damaged. | • Replace the damaged cable. | → Replacing the H ink tube, tube branch and damper assembly. |
| | | (6) The ink pump assembly may have a problem. | • Replace the ink pump assembly. | → Replacing the pump assembly. |
| | | (7) The maintenance assembly may have a problem. | • Replace the maintenance assembly. | → Replacing the maintenance assembly. |

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| | | (8) The CR board assembly may have a problem. | • Replace the CR board assembly. | → Replacing the CR board assembly |
| | | (9) The HEAD_DRV board may be damaged. | • Replace the HEAD_DRV board. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| | | (10) The Mainboard assembly may have a problem. | • Replace the Mainboard assembly. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly. |
| 7 | Drawn black on a full screen (Or other specified colour) | (1) Check the head and CR cables for skewed insertion. | • Redo the connections of the following connectors. Connectors for the print head.<br>• CR board : J201 – J232<br>• Mainboard : J137 - J152 | → Replacing the print head assembly and head tape power cable.<br>→ Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly |
| | | (2) The head and CR cables may be damaged. | • Replace the CR tape power cables. | → Replacing the steel bearer, tube bearing, CR tape power cable and ink tube. |
| | | (3) The print head assembly may be damaged. | • Replace the print head assembly. | → Replacing the print head assembly and head tape power cable. |
| | | (4) The CR board assembly may have a problem. | • Replace the CR board assembly. | → Replacing the CR board assembly. |
| | | (5) The HEAD_DRV assembly board may be damaged. | • Replace the HEAD_DRV assembly board | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly |

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| | | (6) The Mainboard assembly may have a problem. | • Replace the Mainboard assembly. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly |
| 8 | Light and slade printing occurs. | (1) Check if the use conditions are within the normal operation conditions. | • Be sure to use the product under the guaranteed operation conditions. | - |
| | | (2) Check if printing began immediately after ink replenishment. | • The following phenomena may occur for the first printing that is processed immediately after ink replenishment.<br>• Faint lines are drawn.<br>• White streaks appear on the printing.<br>• If these conditions are observed, perform cleaning a couple of times before printing, then check the result.<br>• If cleaning does not improve the result, leave the products for at least several hours, redo the cleaning operation, then check the results again. | → User's Guide |
| 9 | Irregularities occur in the image picture. | (3) Check the band feed adjustments. | • Adjust the band feed. | → Band feed correction menu |
| 10 | The lines in the CR direction split. | (4) Check the head adjustments. | • Adjust the head. | → Head precision adjustment |
| 11 | Black or white streaks occur in printings. | (5) Check if the suction fans are operating correctly via "Test:Fan" of the self-diagnostic function. | • Check the connections of the following connections.<br>• Mainboard : J111-J116 | → Replacing the suction fan assembly. |

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| | | (6) If the paper in concern is roll paper, check if the scroller is rotating smoothly. | • Make sure the scroller receivers are installed in the correct position.<br>• Replace the rollers of the scroller. | → Replacing the scroller R assembly.<br>→ Replacing the scroller L assembly. |
| | | (7) Make sure hat the PF belt tension is adjusted correctly. | • Adjust the tension of the PF reduction belt. | → PF deceleration belt tension adjustment. |
| | | (8) Check if the pump is running during the cleaning operation. | • Check that the connections of Mainboard connectors J160-J161 are good.<br>• Replace the pump motor.<br>• Replace the Mainboard assembly. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly<br>→ Replacing the pump motor assembly. |
| | | (9) Check if he nozzle face is wiped correctly. | • Using the wiper, wipe the nozzle face well. | → User's Guide |
| | | (10) Check the cleaning wipers for contamination. | • Using the provided cleaning cloth for cleaning the wipers, slightly dampen it with cleaning liquid and wipe the surface of the cleaning wipers, then recheck their condition by performing the cleaning operation.<br>• If the ink is solid and does not come off by wiping, replace the wiper. | → User's Guide<br>→ Replacing the cleaner |
| | | (11) Check the T fence for contamination | • Clean the T fence.<br>• If contamination cannot be cleaned up, replace the T fence | → Replacing the fence |
| | | (12) Check the rotation of the pressure roller with the pressure arm at the raised position. | • If the surrounding area of the pressure roller is contaminated by paper dust and waste paper, wipe it with a soft dampened cloth. | → User's Guide |
| | | (13) Check if the QR code is input correctly. | • Input the correct QR codes. | → Head rank input menu |

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| | | (14) The head assembly may be damaged. | • Replace the damaged head assembly. | → Replacing the print head assembly and head tape power cable. |
| | | (15) The ink tube may be damaged. | • Replace the ink tube. | → Replacing the steel bearer, tube guide, CR tape power cable and ink tube. |
| | | (16) The CR board assembly may have a problem. | • Replace the CR board assembly. | → Replacing the print head assembly and head tape power cable. |
| | | (17) The Mainboard assembly may have a problem. | • Replace the Mainboard assembly | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly |
| 12 | The printing boundary is smeared. | (1) Check if the condition is recovered by cleaning. | • If the condition is not recovered by performing the cleaning operation a couple of times, leave the product for a while then recheck it. | → User's Guide |
| | | (2) Check if the set paper is one of those recommended by MUTOH. | • Reset the recommended paper and recheck the condition. If paper not recommended by MUTOH is used, the paper may not be recognized correctly by the paper sensor.<br>• Check the condition using the printing mode that is recommended for the paper. | → User's Guide |
| | | (3) Check the head adjustments. | • Adjust the head. | → Head precision adjustment |
| | | (4) Check if the QR code is input correctly. | • Input the correct QR codes. | → Head rank input menu |
| | | (5) The CR cables may be damaged. | • Replace the CR tape power cables. | → Replacing the steel bearer, tube guide, CR tape power cable and ink tube. |

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| | | (6) Check the head assembly for breakage. | • Replace the damaged head assembly | → Replacing the print head assembly and head tape power cable. |
| | | (7) The CR board assembly may have a problem. | • Replace the CR board assembly. | → Replacing the CR board assembly |
| | | (8) The Mainboard assembly may have a problem. | • Replace the Mainboard assembly | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly |
| 13 | There are many satellite droplets (unnecessary dots) | (1) Check if the use conditions are within the normal operation conditions. | • Be sure to use the product under the guaranteed operation conditions. | |
| 14 | Fiber tracking is shown in prints. | (2) Check if printing began immediately after ink replenishment. | • The following phenomea may occur for the first printing processed immediately after ink replenishment.<br>• Faint lines are drawn.<br>• White streaks appear on the printing.<br>• If these conditions are observed, perform cleaning a couple of times before printing, then check the results.<br>• If cleaning does not improve the results, leave the products for at least several hours, redo the cleaning operation, then check the results again. | → User's Guide |
| 15 | Lines look blurred when printed. | (3) Check if the tension of the steel belt is properly adjusted. | • Adjust the steel belt tension. | → Steel belt tension adjustment |
| | | (4) Check the head adjustments. | • Adjust the head. | → Head precision adjustment |

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| (5) Check the T fence for contamination. | • Clean the T fence<br>• If contaminants cannot be cleaned up by cleaning, replace the T fence. | → Replacing the T fence |
| (6) Make sure that the CR_ENC assembly and the T fence are not interfering. | • If they interfere with each other, adjust the installation positions of the CR_ENC assembly and the T fence.<br>• If the adjustments do not improve this, replace the CR_ENC assembly and the T fence. | → Replacing the T fence.<br>→ Replacing the CR_ENC assembly |
| (7) Check if the pump is running during the cleaning operation. | • Check that connections of Mainboard connectors J160-J161 are good.<br>• Replace the pump motor assembly.<br>• Replace the Mainboard assembly. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly<br>→ Replacing the pump motor assembly. |
| (8) Check if the nozzle face is wiped correctly. | • Using the wiper, wipe the nozzle face well. | → User's Guide |
| (9) Check the cleaning wipers for contamination. | • Using the provided cleaning cloth for cleaning the wipers, slightly dampen it with cleaning liquid and wipe the surfaces of the cleaning wipers, then recheck their conditions by performing the cleaning operation.<br>• If the ink is solid and does not come off by wiping, replace the wiper. | → User's Guide.<br>→ Replacing the cleaner |
| (10) Check if the QR code is input correctly. | • Input the correct QR codes. | → Head rank input menu |
| (11) The head assembly may be damaged. | • Replace the damaged head assembly | → Replacing the print head assembly and head tape power cable. |

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| | | (12) The ink tube may be damaged. | • Replace the ink tube. | → Replacing the steel bearer, tube guide, CR tape power cable and ink tube. |
| | | (13) The CR board may have a problem. | • Replace the CR board assembly. | → Replacing the CR board assembly. |
| | | (14) The Mainboard assembly may have a problem. | • Replace the Mainboard assembly. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly |
| 16 | Mixed colour lines do not overlap. | (1) Check if the tension of the steel belt is properly adjusted. | • Adjust the steel belt tension. | → Steel belt tension adjustment |
| 17 | The positions of black and colours are not aligned. | (2) Check the head inclination and height adjustments. | • Adjust the inclination and height of the head. | → Head precision adjustment |
| | | (3) Check the two-way printing position alignment for problems. | • Adjust the two-way printing position alignment. | → Repeatability alignment menu |
| | | (4) Check if CW adjustments are made correctly. | • Perform the CW adjustments. | → CW adjustment menu |
| | | (5) Check if the QR code is input correctly. | • Input the correct QR codes. | → Head rank input menu |
| | | (6) Make sure that the CR_ENC assembly and the T fence are not interfering. | • If they are interfering with each other, adjust the installation positions of the CR_ENC assembly and the T fence.<br>• If the adjustments do not improve this, replace the CR_ENC assembly and the T fence. | → Replacing the T fence.<br>→ Replacing the CR_ENC assembly. |
| | | (7) The head assembly may be damaged. | • Replace the damaged head assembly. | → Replacing the print head assembly and head tape power cable. |
| 18 | A limited line in the head travel direction is not accurate (in the main scanning direction) | (1) Check if the use conditions are within the normal operation conditions. | • be sure to use the product under the operation conditions. | - |

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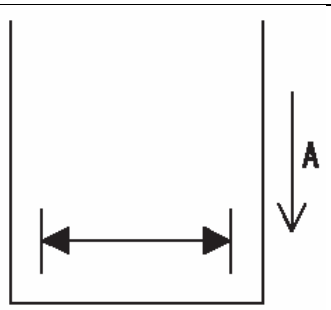
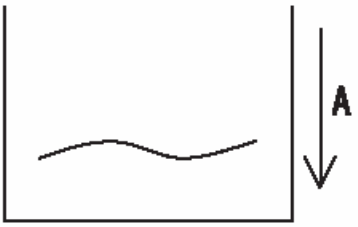
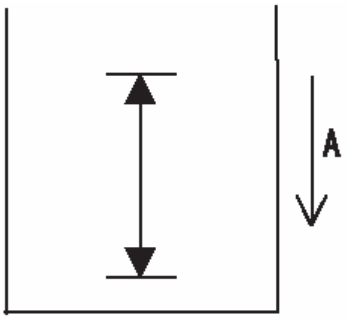
| |  A: Paper discharging direction | (2) Check if the tension of the steel belt is adjusted correctly. | • Adjust the steel belt tension. | → Steel belt tension adjustment |
| | | (3) Check the T fence for contamination. | • Clean the T fence<br>• If the contaminants cannot be cleaned up, replace the T fence. | → Replacing the T fence. |
| | | (4) The internal process operation of the Mainboard assembly may be malfunctioning. | • Check the operation again after initializing parameters and re-inputting and re-adjusting them. | → Parameter initialization menu. |
| 19 | Straight lines in the head travel direction are not accurate (straightness)  A: Paper discharging direction | (1) Make sure that the PF reduction belt tension is adjusted correctly. | • Adjust the tension of the PF reduction belt. | → PF deceleration belt tension adjustment. |
| | | (2) Check the rotation of the pressure roller with the pressure arm at the raised position. | • If the surrounding area of the pressure arm is contaminated by paper, wipe it with a soft dampened cloth. | → User's Guide |
| | | (3) Check if rattles are heard when the carriage is moved from side to side. | •Clean the dust from the carriage bearings and roller guide. When the roller guide is cleaned, apply a light coat of grease on the roller guide using a cloth soaked in grease spray.<br>• Replace the CR cursor assembly | → Replacing the CR cursor assembly. |
| 20 | A limited line in the paper feed direction is not accurate ( in the sub scanning direction)  | (1) Check if the use conditions are within the normal operation conditions. | • Be sure to use the product under the operation conditions. | - |
| | | (2) Check if distance is compensated for the paper in use. | • Compensate the distance. | → Band feed correction menu |
| | | (3) Check the PF drive pulley for looseness. | • Replace the PF motor assembly. | → Replacing the PF motor assembly. |
| | | (4) Make sure that the PF reduction belt tension is adjusted correctly. | • Adjust the tension of the PF reduction belt. | → PF deceleration belt tension adjustment |

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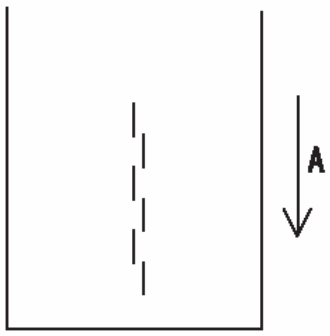
| | A : Paper discharging direction | (5) Check the rotation of the pressure roller with the pressure arm at the raised position. | • If the surrounding area of the pressure roller is contaminated by paper dust and waste paper, wipe it with a soft dampened cloth. | → User's Guide |
| | | (6) Check the grid roller for rugged movement. Also, check the rotary movement for irregularities. | • If foreign material such as paper dust and wastepaper are found on the grid rollers, remove them using a nylon brush. | → User's Guide |
| | | (7) If the paper in concern is roll paper, check if the scroller is rotating smoothly. | • Make sure that the scroller receiver is installed correctly.<br>• Replace the rollers of the scroller. | → Replacing the scroler R assembly.<br>→ Replacing the scroller L assembly. |
| 21 | Straightness in the paper feed direction is not accurate (paper joint accuracy).<br>  <br><br>A : Paper discharging direction | (1) Check if the actually installed head rank and the registered head rank match. | • Input the correct head rank. | → Head rank input menu. |
| | | (2) Adjust the inclination of the head. | • Adjust the inclination of the head. | → Head precision adjustment. |
| | | (3) Check if the tension of the steel belt is adjusted correctly. | • Adjust the steel belt tension. | → Steel belt tension adjustment. |
| | | (4) Check the two-way printing position alignment for problems. | • Adjust the two-way printing position alignment. | → Repeatability alignment menu |
| | | (5) Check if the CW adjustments are made correctly. | • Perform the CW adjustments. | → CW adjustments menu |
| | | (6) Check the T fence for contamination. | • Clean the T fence<br>• If contaminants cannot be cleaned up, replace the T fence. | → Replacing the T fence |
| | | (7) Check the CR cursor assembly for play. | • Replace the CR cursor assembly. | → Replacing the CR cursor assembly. |
| 22 | Inaccurate squareness | (1) Check the installation method of the paper. | Setup the paper according to the User's Guide. | → User's Guide |

| | | | | |
|---|---|---|---|---|
| | | (2) Check the rotation of the pressure roller with the pressure arm at the raised position. | • If the surrounding area of the pressure roller is contaminated by paper dust and waste paper, wipe it with a soft dampened cloth. | → User's Guide |
| | | (3) Check the grid roller for rugged movement. Also, check the rotary movement for irregularities. | • If the surrounding area of the pressure roller is contaminated by paper dust and waste paper, wipe it with a soft dampened cloth. | → User's Guide |
| 23 | Abnormal discharge occurs. | (1) Check if the two head tape power cables stick together. | • The cores of the head tape power cables should be aligned for each head and taped together with double-sided tape. | → Replacing the print head assembly and head tape power cable. |
| | | (2) Make sure that the CR tape power cables are bundled correctly. | • Bundle the CR tape power cables so that they do not move. | → Replacing the steel bearer, tube guide, CR tape power cable and ink tube. |

## 9.3.4. Problems relating to noise

| No. | Phenomenon | Check point | Action | Refer to |
|---|---|---|---|---|
| 1 | There is noise when the paper is loaded. | (1) Check the surroundings of the suction fan assembly for obstructions and foreign objects. | • Remove obstructions and foreign material. | → Replacing the suction fan assembly. |
| | | (2) Check the cables for damage and make sure that the connector connections are good. | • If damage is found, replace the appropriate parts. | - |
| | | (3) The suction fan assembly may have failed. | • Replace the suction fan assembly. | → Replacing the suction fan assembly. |
| | | (4) The Mainboard assembly may have failed. | • Replace the Mainboard assembly | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly |
| | | (5) The power supply board assembly may have a problem. | • Replace the power supply board assembly. | → Replacing the power source board assembly. |
| 2 | You hear some noise during printing wait. | (1) Check the area where there is noise from for obstruction and foreign materials. | • Remove the obstructions and foreign materials. | - |
| 3 | You hear some noise when the head is moving from side to side. | (1) Check if the high pitch sound emitted while ink is discharging during printing, is not confused with the noise. | • Follow the descriptions in the specifications. | - |
| | | (2) Check the screws on the cover for looseness that causes noise. | • Re-tighten the screws. | → Removing the cover. |

| | | | | |
|---|---|---|---|---|
| | | (3) Check if rattles are heard when the carriage is moving from side to side. | • Clean the dust from the carriage bearings and roller guide. When the roller guide has been cleaned, apply a light coat of grease on the roller guide using a cloth soaked in grease spray.<br>• Replace the CR cursor assembly. | → Replacing the CR cursor assembly |
| | | (4) Check the CR cables for noise. | • Correct the cable's tendency and fix the condition.<br>• If noise is heard from between the steel bearing and tube guide, replace the tube guide. | → Replacing the steel bearer, tube guide, CR tape power cable and ink tube. |
| | | (5) Make sure that the CR_ENC assembly and the T fence are not interfering. | • If interference is observed, adjust the installation positions of the appropriate components.<br>• If the adjustment does not improve this, replace the appropriate components. | → Replacing the T fence<br>→ Replacing the CR_ENC assembly |
| | | (6) Check the bearings of the CR driven pulley for noise. | • Replace the CR driven pulley assembly. | → Replacing the CR slave pulley assembly. |
| | | (7) Check if the tension of the steel belt has been properly adjusted. | • Adjust the steel belt tension. | → Steel belt tension adjustment. |
| | | (8) Check the CR motor assembly for noise. | • Replace the CR motor assembly. | → Replacing the CR motor assembly. |
| | | (9) Check the cursor roller of the CR cursor assembly for noise. | • Replace the cursor roller. | → Replacing the cursor roller assembly. |
| 4 | You hear some noise when the paper is fed. | (1) Check the PF reduction belt for the skipping of teeth between the belt and PF reduction pulley. | • Replace the PF reduction belt. | → Replacing the PF motor assembly |
| | | (2) Check the PF motor assembly for noise | • Replace the PF motor assembly. | → Replacing the PF motor assembly |

| | | | | |
|---|---|---|---|---|
| | | (3) Check the grid roller for rugged movement. Also, check the rotary movement for irregularities. | • If foreign materials such as paper dust and waste paper are found on the grid rollers, remove it using a nylon brush. | → User's Guide. |

## 9.3.5. Problems relating to the paper cutting operation

| No. | Phenomenon | Check point | Action | Refer to |
|---|---|---|---|---|
| 1 | The cutting operation is not performing correctly. | (1) Check the operation panel and make sure that the media cutting setting is not set to off or manual. | • Change the setting. | → User's Guide |
| | | (2) Check the operation panel and make sure that PaperDet. has not been set to TakeUpRoll. | • Change the setting. | → User's Guide |
| | | (3) Check the cutter grooves for accumulated paper dust and clips. | • Remove the accumulated paper dust along the direction of the grooves. | → User's Guide |
| | | (4) Is the cutter cap securely insalled? | • Reset the cutter cap securely. | → User's Guide |
| | | (5) Check the cutter's up and down sliding operation. | • If it does not rise : go to step 4<br>• if it rises : go to step 5 | - |
| | | (6) Check if the cutter drops to the bottom end under its own weight when the cutter is installed without the cutter spring. | • If it drops : The cutter spring may have a problem. Replace the cutter spring while referring to the unfolded view.<br>• If it does not drop : The cutter may have a problem. Replace the cutter. If the cutter does not drop after it is replaced, replace the cutter holder. | → Replacing the cutter holder, cutter spring, cutter cap, solenoid assembly and solenoid spring. |
| | | (7) Check the up and down operation of the solenoid via "Life/Cutter" of the self-diagnostic function. | | |

| | | | | |
|---|---|---|---|---|
| | | a) The solenoid moves up and down:<br>check the cutter's down position relative to the cutter groove. | OK :<br>The cutter's service life has exceeded or the cutter is damaged. Replace the cutter.<br>NG :<br>Adjust the position of the cutter holder. | → User's Guide<br>→ Cutter adjustment |
| | | b) It does not move up or down. | • The connectors may have poor contacts.<br>Check the connections of the following connectors.<br>• CR board : J235<br>• CR board : J201-J216<br>• Mainboard : J137-J152 | → Replacing the CR board assembly<br>→ Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly |
| | | (8) Open CR cable, faulty solenoid assembly, faulty board assembly, etc. may be the causes. | • Replace the CR tape power cables.<br>• Replace the solenoid assembly<br>• Replace the CR board assembly<br>• Replace the Mainboard assembly | → Replacing the steel bearer, tube guide, CR tape power cable and ink tube.<br>→ Replacing the cutter holder, cutter spring, cutter cap, solenoid assembly and solenoid spring.<br>→ Replacing the CR board assembly<br>→ Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly |
| 2 | Cutting has been performed during printing. | (1) Check if the paper (output) size on the application side is correct. | • Correct the paper (output) size on the application side. | - |
| | | (2) The program ROM may have failed. | • Upgrade the firmware version. | → Firmware installation |

| | | | | |
|---|---|---|---|---|
| | | (3) Check the CR cables for skewed insertion. | • Check the connections of the following connectors.<br>• CR board : J235<br>• CR board : J201-J216<br>• Mainboard : J137 – J152 | → Replacing the CR board assembly |
| | | (4) The CR board may have a problem. | • Replace the CR board. | → Replacing the CR board assembly |
| | | (5) The Mainboard may have a problem. | • Replace the Mainboard . | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly |
| 3 | The cutting operation is in process, but the paper has not been cut. | (1) Check the cutter blade for shipping and deterioration. | • Replace the cutter. | → User's Guide |
| 4 | The paper has not been cut as smoothly as expected, resulting in jamming. | (2) Check if the cutter cap is securely installed. | • Reset the cutter cap securely. | → User's Guide |
| | | (3) Check if the cutter moves up and down smoothly. | • Reinstall the cutter spring. | - |
| | | (4) Check the cutter grooves for accumulated paper dust and slips. | • Remove the accumulated paper dust along the direction of the grooves. | → User's Guide |
| | | (5) Check if the cutter blade is parallel with the groove. | • Make adjustments. | → Replacing the cutter holder, cutter spring, cutter cap, solenoid assembly and solenoid spring. |
| 5 | The cutting operation is in process but the paper does not fall off. | (1) The sub-platen (cutter groove) requires daily maintenance. | • Clean the surface of the sub-platen | |
| | | (2) The sub-platen, paper guide or the paper may be charged with static electricity. | • Provide a proper ground.<br>• Check and adjust the ambient humidity so that it meets the normal operation conditions of the product and paper. | - |
| 6 | Inaccurate paper cutting | (1) Check the cutter blade for chipping and deterioration. | • Replace the cutter. | → User's Guide |

| | | | | |
|---|---|---|---|---|
| | | (2) Has the cutter cap been securely installed? | • Reset the cutter cap securely. | → User's Guide |
| | | (3) Check if the cutter moves up and down smoothly. | • Reinstall the cutter spring. | - |
| | | (4) Check the cutter grooves for accumulated paper dust and slips. | • Remove the accumulated paper dust along the direction of the grooves. | → User's Guide |
| | | (5) Check if the cutter blade is parallel with the groove. | • Make adjustments. | → Replacing the cutter holder, cutter spring, cutter cap, solenoid assembly and solenoid spring. |
| | | (6) The cutter may have a problem. | • Replace the cutter. | → User's Guide |
| 7 | Cutting starts after the completion of the print. | (1) Check the operation panel and make sure the InkDryTime has not been set. | • Change the settings. | → User's Guide |
| | | (2) Check the LCD and see if messages for an analysis have been displayed. | • Printing data remains. | → User's Guide |

## *9.3.6. Problems relating to online and functions*

| No. | Phenomenon | Check point | Action | Refer to |
|---|---|---|---|---|
| 1 | Online has not been properly established by Centronics. | (1) Check the centronics settings in the operation panel. | • Change the setting. | → User's Guide |
| | | (2) Replace the interface cables and see if errors still occur. | • Trouble such as an open interface cable or cables that are too long may cause communication failure. An instruction must be given so that only cables compliant with the standard are used. | - |
| | | (3) The program ROM may have failed. | • Upgrade the firmware version. | → Firmware installation |
| | | (4) The Mainboard assembly may have a problem. | • Replace the Mainboard assembly. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly |
| 2 | Online has not been properly established by the network. | (1) Check if the cables in use for connections are correct. | • Use 100BASE-T cross cables for direct connections to the host.<br>• Use 100BASE-T straight cables for connections using HUBs. | - |
| | | (2) Check the network settings in the operation panel for problems. | • Reset the settings upon confirmation by an network administrator. | → User's Guide |
| 3 | Scaling is not functioning correctly. | (1) The program ROM may have failed. | • Upgrade the firmware version | → Firmware installation |
| 4 | Mirroring is not functioning correctly. | (2) The Mainboard assembly may have | • Replace the Mainboard | → Replacing the |

| | | | | |
|---|---|---|---|---|
| 5 | Other functions are not performing correctly. | a problem. | assembly | Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly |
| 6 | The printing position has been misaligned. | (1) Check if CW adjustments are made correctly. | • Make adjustments. | → CW adjustment menu |
| | | (2) Check the top & bottom adjustments | • Make adjustments. | → Top & Bottom adjustment menu |
| | | (3) The program ROM may have failed. | • Upgrade the firmware version | → Firmware installation |
| | | (4) The Mainboard assembly may have a problem. | • Replace the Mainboard assembly | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_ DRV board assembly and cooling fan assembly |
| 7 | A portion of the data has not been drawn (is missing). | (1) The program ROM may have failed. | • Upgrade the firmware version. | → Firmware installation |
| 8 | Garbled characters or printings are produced. | (2) Check the T fence for contamination and bends. | • If contaminated with grease and dusts, wipe with a dry cloth.<br>• If contaminated with ink, wipe with a lightly dampened cloth and then with a dry cloth.<br>•If contamination is severe, replace the T fence. | → Replacing the T fence |

| | | | | |
|---|---|---|---|---|
| | | (3) Check the "Encoder:PF" via "Test:Encoder" of the self-diagnostic function | • Make sure that the connections of Mainboard assembly connector J132 are good.<br>• Replace the T fence.<br>• Replace the CR_ENC assembly.<br>• Replace the CR motor.<br>• Replace the CR_BASE board assembly.<br>• Replace the CR tape power cables. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly→ Replacing the T fence.<br>→ Replacing the CR motor assembly<br>→ Replacing the CR board assembly.<br>→ Replacing (storing) the steel bearing, tube guide, CR tape power cable and ink tube. |
| | | (4) The Mainboard assembly may have a problem. | • Replace the Mainboard assembly | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly |
| 9 | After printing has been completed, the paper is fed an extra amount. | (1) The program ROM may have failed. | • Upgrade he firmware version. | → Firmware installation |
| | | (2) The Mainboard assembly may have a problem. | • Replace the Mainboard assembly | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly |

## *9.3.7. Other problems*

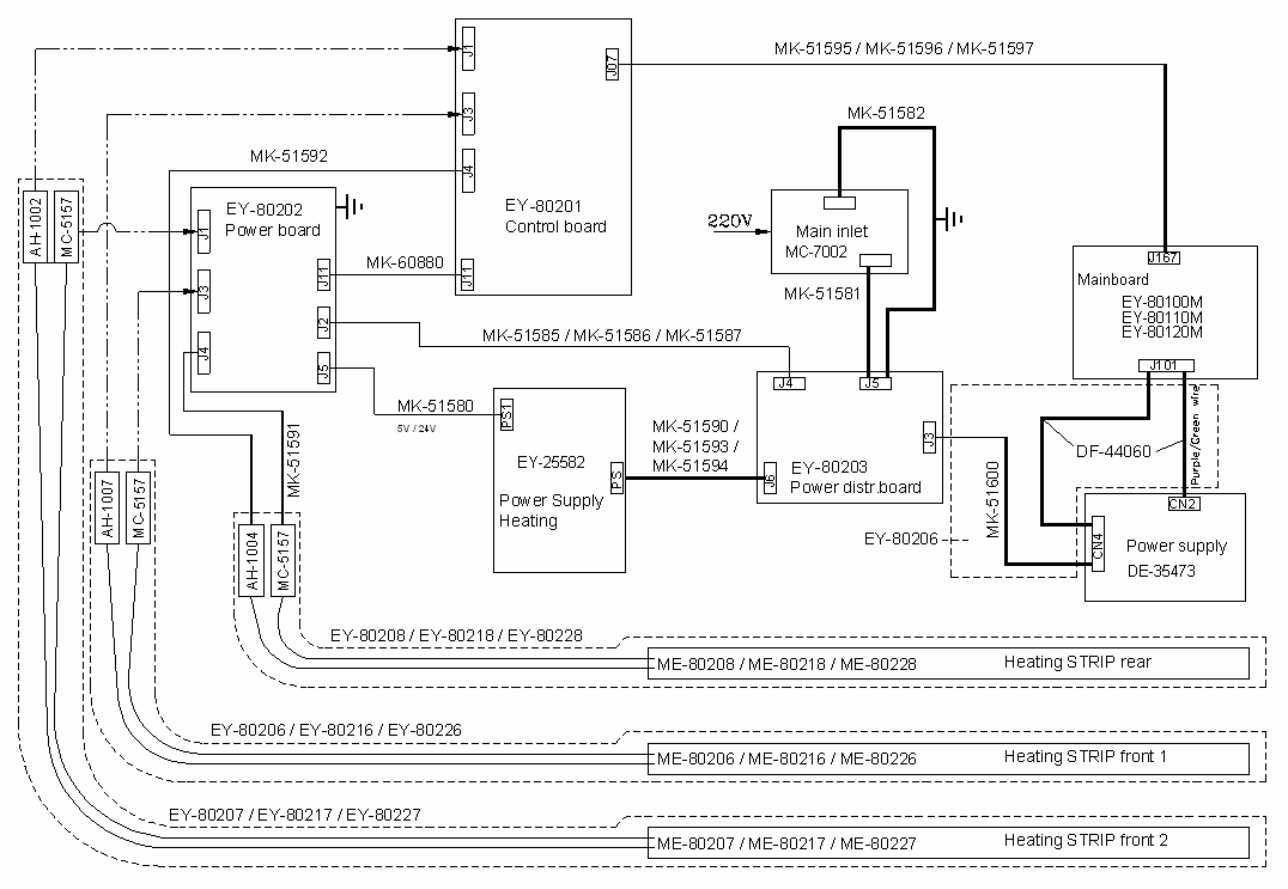
| No. | Phenomenon | Check point | Action | Refer to |
|---|---|---|---|---|
| 1 | A hang up occurs | (1) The internal process operation of the Mainboard assembly may be malfunctioning. | • Check the operation again after initializing parameters and re-inputting and re-adjusting them. | → Parameter backup |
| | | (2) The Mainboard assembly may have a problem. | • Replace the Mainboard assembly. | → Replacing the Mainboard assembly, HDD_Extension board assembly, HEAD_DRV board assembly and cooling fan assembly |
| 2 | The power has been cut off during the printing operation. | (1) Make sure that the power cables are not disconnected. | • Securely connect the power cables. | - |
| | | (2) Check the power cables for a shorted condition. | • Check the condition using a tester. | - |
| | | (3) Check for leakage. | • Check the cables for peeled off insulation and contact with the case. | - |

# 10. APPENDIX

## 10.1. INTRODUCTION

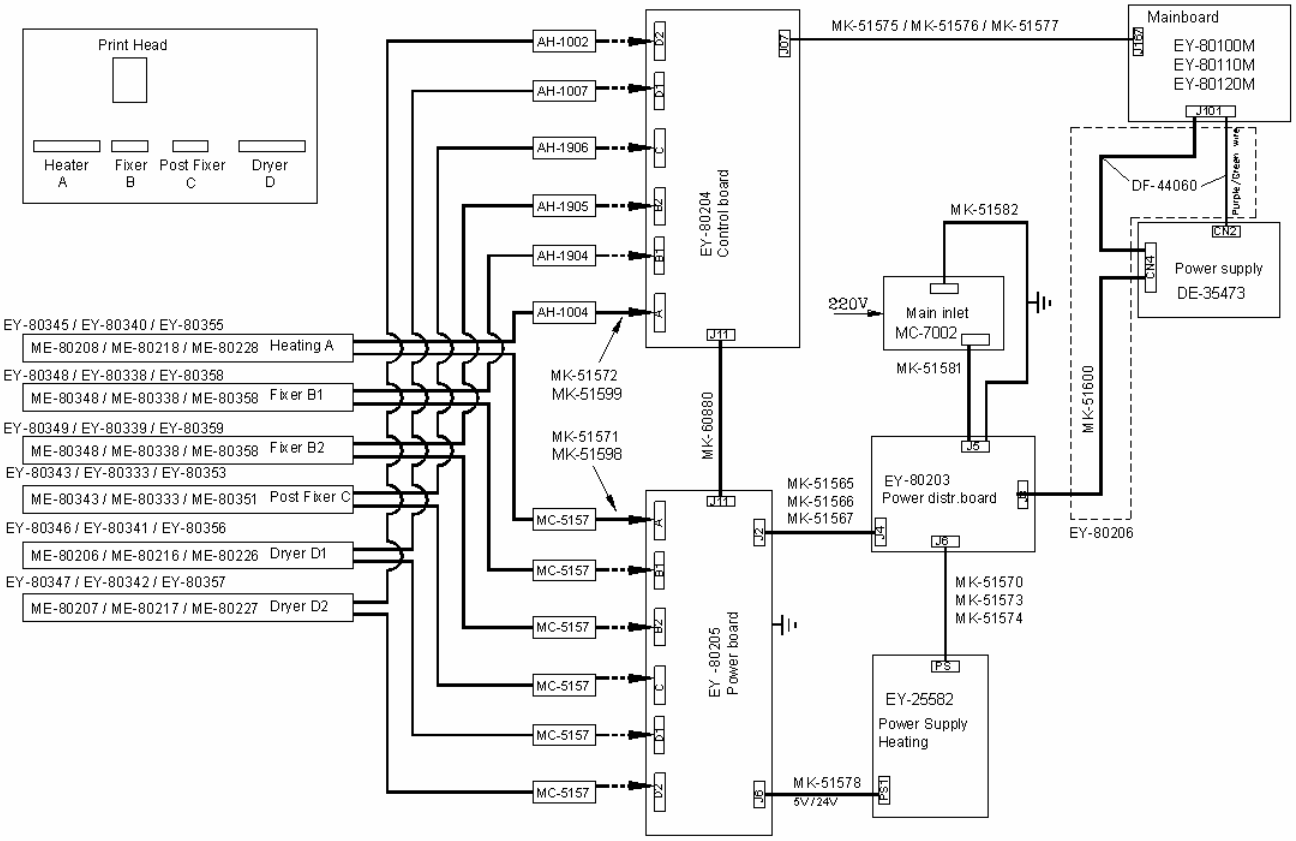
This chapter provides referential information such as service data and exploded views.

## 10.2. WIRING DIAGRAM FALCON II OUTDOOR 2H



| No. | Service part | Service diagram | Spec. (inch) | | | Remarks |
|---|---|---|---|---|---|---|
| | | | 50 | 64 | 87 | |
| 1 | Mainboard 50” | EY-80100M | X | | | |
| 2 | Mainboard 64” | EY-80110M | | X | | |
| 3 | Mainboard 87” | EY-80120M | | | X | |
| 4 | Power Supply | DE-35473 | X | X | X | |
| 5 | Mounting MK-51600 --> DF-44060 | EY-80206 | X | X | X | |
| 6 | Power Supply Cable | MK-51580 | X | X | X | |
| 7 | Power Inlet | MC-7002 | X | X | X | |
| 8 | Power Inlet To MP-80203 | MK-51581 | X | X | X | |
| 9 | FG Cable L=120 MN RH | MK-51582 | X | X | X | |
| 10 | AC Cable 1 50 | MK-51585 | X | | | |
| 11 | AC Cable 1 64 | MK-51586 | | X | | |
| 12 | AC Cable 1 87 | MK-51587 | | | X | |
| 13 | Ext. Cable AC-Heat Strip R | MK-51591 | X | X | X | |
| 14 | Ext. Cable Sens-Heat R | MK-51592 | X | X | X | |
| 15 | AC Cable 2 50 | MK-51590 | X | | | |
| 16 | AC Cable 2 64 | MK-51593 | | X | | |
| 17 | AC Cable 2 87 | MK-51594 | | | X | |
| 18 | Interf. Cable DB 9M - Jst 50 | MK-51595 | X | | | |
| 19 | Interf. Cable DB 9M - Jst 64 | MK-51596 | | X | | |
| 20 | Interf. Cable DB 9M - Jst 87 | MK-51597 | | | X | |
| 21 | Falcon II Outdoor Remote Powercable | MK-51600 | X | X | X | |
| 22 | Flatcable Control --> Powerboard | MK-60880 | X | X | X | |
| 23 | Contr. Board Heat Syst. RH | EY-80201 | X | X | X | |
| 24 | Power Board Heat Syst. RH | EY -80202 | X | X | X | |
| 25 | Powerdistribut Board Men | EY -80203 | X | X | X | |
| 26 | Heat Strip Assy Front 1 50 | EY -80206 | X | | | |
| 27 | Heat Strip Assy Front 2 50 | EY -80207 | X | | | |
| 28 | Heat Strip Assy Rear 50 | EY -80208 | X | | | |
| 29 | Heat Strip Assy Front 1 64 | EY -80216 | | X | | |
| 30 | Heat Strip Assy Front 2 64 | EY -80217 | | X | | |
| 31 | Heat Strip Assy Rear 64 | EY -80218 | | X | | |
| 32 | Heat Strip Assy Front 1 87 | EY -80226 | | | X | |
| 33 | Heat Strip Assy Front 2 87 | EY -80227 | | | X | |
| 34 | Heat Strip Assy Rear 87 | EY -80228 | | | X | |

# 10.3. WIRING DIAGRAM FALCON II OUTDOOR 4H




| No. | Service part | Service diagram | Spec. (inch) | | | Remarks |
|---|---|---|---|---|---|---|
| | | | 50 | 64 | 87 | |
| 1 | Mainboard 50” | EY-80100M | X | | | |
| 2 | Mainboard 64” | EY-80110M | | X | | |
| 3 | Mainboard 87” | EY-80120M | | | X | |
| 4 | Power Supply | DE-35473 | X | X | X | |
| 5 | Mounting MK-51600 --> DF-44060 | EY-80206 | X | X | X | |
| 6 | Post fixer C RH VU 64" | EY-80333 | | X | | |
| 7 | Fixer B1 RH VU 64" | EY-80338 | | X | | |
| 8 | Fixer B2 RH VU 64" | EY-80339 | | X | | |
| 9 | Heater A RH VU 64" | EY-80340 | | X | | |
| 10 | Dryer D1 RH VU 64" | EY-80341 | | X | | |
| 11 | Dryer D2 RH VU 64" | EY-80342 | | X | | |
| 12 | Post fixer C RH VU 50" | EY-80343 | X | | | |
| 13 | Heater A RH VU 50" | EY-80345 | X | | | |
| 14 | Dryer D1 RH VU 50" | EY-80346 | X | | | |
| 15 | Dryer D2 RH VU 50" | EY-80347 | X | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 16 | Fixer B1 RH VU 50" | EY-80348 | X | | | |
| 17 | Fixer B2 RH VU 50" | EY-80349 | X | | | |
| 18 | Post fixer C RH VU 87" | EY-80353 | | | X | |
| 19 | Heater A RH VU 87" | EY-80355 | | | X | |
| 20 | Dryer D1 RH VU 87" | EY-80356 | | | X | |
| 21 | Dryer D2 RH VU 87" | EY-80357 | | | X | |
| 22 | Fixer B1 RH VU 87" | EY-80358 | | | X | |
| 23 | Fixer B2 RH VU 87" | EY-80359 | | | X | |
| 24 | AC Cable 1 SMDP RJ8/50 VU | MK-51565 | X | | | |
| 25 | AC Cable 1 SMDP RJ8/64 VU | MK-51566 | | X | | |
| 26 | AC Cable 1 SMDP RJ8/87 VU | MK-51567 | | | X | |
| 27 | AC Cable 2 SMDP RJ8/50 VU | MK-51570 | X | | | |
| 28 | Ext. Cable AC-Heatstrip R RJ8 UV | MK-51571 | X | X | | |
| 29 | Ext. Cable AC Heatstrip A RHII 87 | MK-51598 | | | X | |
| 30 | Ext. Cable sens-Heat R RJ8 UV | MK-51572 | X | X | X | |
| 31 | Ext. Cable Sens heat A RHII | MK-51599 | | | X | |
| 32 | AC Cable 2 SMDP RJ8/64 VU | MK-51573 | | X | | |
| 33 | AC Cable 2 SMDP RJ8/87 VU | MK-51574 | | | X | |
| 34 | Interf Cable DB9-Jst SDMP50 UV | MK-51575 | X | | | |
| 35 | Interf Cable DB9-Jst SDMP64 UV | MK-51576 | | X | | |
| 36 | Interf Cable DB9-Jst SDMP87 UV | MK-51577 | | | X | |
| 37 | Power Supply Cable RH2 VU | MK-51578 | X | X | X | |
| 38 | Power Inlet | MC-7002 | X | X | X | |
| 39 | Power Inlet to MP-80203 RH RJ8 | MK-51581 | X | X | X | |
| 40 | FG Cable L = 120 Mm RH RJ-8 | MK-51582 | X | X | X | |
| 41 | Falcon II Outdoor Remote Powercable | MK-51600 | X | X | X | |
| 42 | Flatcable Control --> Powerboard | MK-60880 | X | X | X | |
| 43 | Powerdistribut. Board Men RJ8 | EY-80203 | X | X | X | |
| 44 | Control Board RH RJ8000 | EY-80204 | X | X | X | |
| 45 | Heater Board RH RJ8000 | EY-80205 | X | X | X | |

# 10.4. FALCON II OUTDOOR : SERVICE PARTS LIST/EXPLODED VIEWS/CONFIGURATION DIAGRAMS

This section includes the service parts list, exploded views of respective units and configuration diagrams.

Notes :

- For the latest 'exploded views' and 'part description', please refer to the spare part lists of the printer.
- For spare parts, please refer to the latest spare part list.
- Specifications are liable to changes without prior notice.

## *10.4.1. Board Components*

| No. | Service part | Service diagram | F2O – 2 heater | | | F2O – 4 heater | | |
|---|---|---|---|---|---|---|---|---|
| | | | 50 | 64 | 87 | 50 | 64 | 87 |
| 1 | DE-35473 (I-10) | Power Supply Board Assy | X | X | X | X | X | X |
| 2 | DF-42818 (I-11) | Power Supply Board Assy | X | X | X | X | X | X |
| 3 | EY-80100M (I-19) | Mainboard Assy 50 | X | | | X | | |
| 4 | EY-80110M (I-19) | Mainboard Assy 64 | | X | | | X | |
| 5 | EY-80120M (I-19) | Mainboard Assy 87 | | | X | | | X |
| 6 | DE-35346 (I-21) | Head Drv Board Assy | X | X | X | X | X | X |
| 7 | DF-42518 (I-22) | HDD Extension Board Assy | X | X | X | X | X | X |
| 8 | DF-42304 (I-29) | Dimm (128MB) | X | X | | X | X | |
| 9 | DF-42519 (I-29) | Dimm (256MB) | | | X | | | X |
| 10 | DF-42515 (I-31) | Junction Board Assy | X | X | X | X | X | X |
| 11 | DF-42501 (I-33) | Junction Ribbon Cable | X | X | X | X | X | X |
| 12 | DF-44465 (I-11) | Lever Foot SW Cable Assy | X | X | X | X | X | X |
| 13 | DF-42655 (I-61) | AC Cable 2 Assy | X | X | X | X | X | X |
| 14 | DF-42656 (I-66) | AC Cable 1 Assy | X | X | X | X | X | X |
| 15 | DF-40777 (I-68) | Cooling Fan Assy | X | X | X | X | X | X |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 16 | DF-42663 (I-69) | Driver Cooling Fan Cable 1 | X | X | X | X | X | X |
| 17 | DF-44060 (I-72) | DC Cable Assy | X | X | X | X | X | X |
| 18 | EY-80203 (I-2003) | PCB Powerdistribut. Board RH2 | X | X | X | X | X | X |
| 19 | MC-7002 (I-2002) | Powerinlet EMI Filter 15geeg3e | X | X | X | X | X | X |
| 20 | MK-51585 | AC Cable 1 50 | X | | | | | |
| 21 | MK-51586 (I-2007) | AC Cable 1 64 | | X | | | | |
| 22 | MK-51587 | AC Cable 1 87 | | | X | | | |
| 23 | MK-51590 | AC Cable 2 50 | X | | | | | |
| 24 | MK-51593 (I-2008) | AC Cable 2 64 | | X | | | | |
| 25 | MK-51565 | AC Cable 1 50 | | | | X | | |
| 26 | MK-51566 (I-2007) | AC Cable 1 64 | | | | | X | |
| 27 | MK-51567 | AC Cable 1 87 | | | | | | X |
| 28 | MK-51570 | AC Cable 2 50 | | | | X | | |
| 29 | MK-51573 (I-2008) | AC Cable 2 64 | | | | | X | |
| 30 | MK-51574 | AC Cable 2 87 | | | | | | X |
| 31 | MK-51575 | Inter cable DB-9 Jst 50 | | | | X | | |
| 32 | MK-51576 (I-2005) | Inter cable DB-9 Jst 64 | | | | | X | |
| 33 | MK-51577 | Inter cable DB-9 Jst 87 | | | | | | X |
| 34 | MK-51594 | AC Cable 2 87 | | | X | | | |
| 35 | MK-51595 | InterCable DB-9-Jst 50 | X | | | | | |
| 36 | MK-51596 (I-2005) | InterCable DB-9-Jst 64 | | X | | | | |
| 37 | MK-51597 | InterCable DB-9-Jst 87 | | | X | | | |
| 38 | MK-51600 (I-2006) | Falcon II Outdoor Remote Powercable | X | X | X | X | X | X |

## ***10.4.2. Cartridge Components***

| No. | Service part | Service diagram | F2O – 2 heater | | | F2O – 4 heater | | |
|---|---|---|---|---|---|---|---|---|
| | | | 50 | 64 | 87 | 50 | 64 | 87 |
| 1 | KY-35389 (G-13) | O-ring Coupling | X | X | X | X | X | X |
| 2 | MY-35048 (G-14–G-16) | Card Board Holder | X | X | X | X | X | X |
| 3 | DF-42552 (G-15) | Holder Pressure Spring | X | X | X | X | X | X |
| 4 | DF-42477 (G-20) | SC Cable K Assy | X | X | X | X | X | X |
| 5 | DF-42478 (G-21) | SC Cable C Assy | X | X | X | X | X | X |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 6 | DF-42479 (G-22) | SC Cable M Assy | X | X | X | X | X | X |
| 7 | DF-42480 (G-23) | SC Cable Y Assy | X | X | X | X | X | X |
| 8 | DF-42481 (G-24) | SC Cable Lc Assy | X | X | X | X | X | X |
| 9 | DF-42482 (G-25) | SC Cable Lm Assy | X | X | X | X | X | X |
| 10 | DF-42483 (G-26) | SC Cable O Assy | X | X | X | X | X | X |
| 11 | DF-42484 (G-27) | SC Cable G Assy | X | X | X | X | X | X |
| 12 | DF-42456 (G-31) | Ink Sensor K Assy | X | X | X | X | X | X |
| 13 | DF-42457 (G-32) | Ink Sensor C Assy | X | X | X | X | X | X |
| 14 | DF-42458 (G-33) | Ink Sensor M Assy | X | X | X | X | X | X |
| 15 | DF-42459 (G-34) | Ink Sensor Y Assy | X | X | X | X | X | X |
| 16 | DF-42460 (G-35) | Ink Sensor Lc Assy | X | X | X | X | X | X |
| 17 | DF-42461 (G-36) | Ink Sensor Lm Assy | X | X | X | X | X | X |
| 18 | DF-42462 (G-37) | Ink Sensor O Assy | X | X | X | X | X | X |
| 19 | DF-42463 (G-38) | Ink Sensor G Assy | X | X | X | X | X | X |
| 20 | DF-44051 | Frame Without Pin | X | X | X | X | X | X |
| 21 | DF-44766 | Frame assy & pin | X | X | X | X | X | X |

## ***10.4.3. Cover Components***

| No. | Service part | Service diagram | F2O – 2 heater | | | F2O – 4 heater | | |
|---|---|---|---|---|---|---|---|---|
| | | | 50 | 64 | 87 | 50 | 64 | 87 |
| 1 | DF-44482 (J-21) | Cover R Sensor Assy | X | X | X | X | X | X |
| 2 | DF-44483 (J-57) | Cover L Sensor Assy | X | X | X | X | X | X |
| 3 | MK-51471 (J-59) | Cover L Cable 50 | X | | | X | | |
| 4 | MK-51472 (J-59) | Cover L Cable 64 | | X | | | X | |
| 5 | MK-51473 (J-59) | Cover L Cable 87 | | | X | | | X |
| 6 | EY-50765 (J-2001) | Cover fan | | | | X | X | X |
| 7 | MK-51617 (J-2005) | Fan Extens cable 16 | | | | X | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 8 | MK-51613 (J-2005) | Fan Extens cable 16 | | | | | X | |
| 9 | MK-51619 (J-2005) | Fan Extens cable 16 | | | | | | X |
| 10 | MK-51618 (J-2006) | Fan Extens cable 26 | | | | X | | |
| 11 | MK-51614 (J-2006) | Fan Extens cable 26 | | | | | X | |
| 12 | MK-51620 (J-2006) | Fan Extens cable 26 | | | | | | X |

## ***10.4.4. Cursor Components***

| No. | Service part | Service diagram | F2O – 2 heater | | | F2O – 4 heater | | |
|---|---|---|---|---|---|---|---|---|
| | | | 50 | 64 | 87 | 50 | 64 | 87 |
| 1 | No 5/6 (D-41) | O-ring Large | X | X | X | X | X | X |
| 3 | No 5/6 (D-43) | O-ring Coupling | X | X | X | X | X | X |
| 4 | DE-35347 (D-35) | CR Board Assy | X | X | X | X | X | X |
| 5 | KY-35389 (D-42) | Branch Pipe 4-3 | X | X | X | X | X | X |
| 6 | MY-40686 (C-25) | P Edge Sensor Assy | X | X | X | X | X | X |
| 7 | DE-21660 (C-27) | Cutter Holder | X | X | X | X | X | X |
| 8 | DF-42872 (C-29) | Solenoid Assy | X | X | X | X | X | X |
| 9 | DF-42887 (C-31) | Solenoid Spring | X | X | X | X | X | X |
| 10 | DF-42815 (C-32) | Cutter Cap | X | X | X | X | X | X |
| 11 | DF-42880 (C-34) | Cutter Spring | X | X | X | X | X | X |
| 12 | DF-42504 (C-68) | Head Ribbon Cable | X | X | X | X | X | X |
| 13 | DF-43951 (C-62) | H Ink Tube 1 | X | X | X | X | X | X |
| 14 | DF-43952 (C-62) | H Ink Tube 2 | X | X | X | X | X | X |
| 15 | MY-44743 (C-2001) | Head Assy F2O | X | X | X | X | X | X |
| 16 | MY-42110 | Damper with O-ring Silicone | X | X | X | X | X | X |
| 17 | MY-80400 | Head Base Assy 4 Heads | X | X | | | | |
| 18 | MY-80410 | Total Curs-Head Assy RH VU 64 | | | X | X | X | X |
| 19 | MY-80402 | Head Base Assy 8 Head | | | X | | | |
| 20 | MY-80419 | Total curs-head assy RH VU 87 | | | | | | X |

## *10.4.5. CR Driving components*

| No. | Service part | Service diagram | F2O – 2 heater | | | F2O – 4 heater | | |
|---|---|---|---|---|---|---|---|---|
| | | | 50 | 64 | 87 | 50 | 64 | 87 |
| 1 | DE-49777 | O-ring Large | X | X | X | X | X | X |
| 2 | E-GP1574P (B-56) | CR HP Sensor Lever Sensor | X | X | X | X | X | X |
| 3 | TB-40058 (B-36) | T-fence Spring | X | X | X | X | X | X |
| 4 | DF-42128 | O-ring Coupling | X | X | X | X | X | X |
| 5 | DF-40719 | Slide Motor Setting Plate | X | X | X | X | X | X |
| 6 | MY-42559 (B-107) | CR Pulley Assy | X | X | X | X | X | X |
| 7 | MY-35384 | CR Motor Assy | X | X | X | X | X | X |
| 8 | MY-43618 (B-160) | CR Drive Pulley Assy | X | X | X | X | X | X |
| 9 | DE-35168 (B-30) | T-fence 50 | X | | | X | | |
| 10 | DE-35169 (B-30) | T-fence 64 | | X | | | X | |
| 11 | DE-35170 (B-30) | T-fence 87 | | | X | | | X |
| 12 | DE-35228 (F-70 / F-52) | Slide Motor Assy | X | X | X | X | X | X |
| 13 | DF-44484 (B-51) | Slide Motor Cable | X | X | X | X | X | X |
| 14 | DF-44468 (B-46) | HD Slide Sensor Assy | X | X | X | X | X | X |
| 15 | DF-44467 (B-57) | CR Org Cable Assy | X | X | X | X | X | X |
| 16 | DF-42581 (B-70) | CR Ribbon Cable 50 | X | | | X | | |
| 17 | DF-42582 (B-70) | CR Ribbon Cable 64 | | X | | | X | |
| 18 | DF-42583 (B-70) | CR Ribbon Cable 87 | | | X | | | X |
| 19 | DF-42561 (B-75) | Steel Bear 50 | X | | | X | | |
| 20 | DF-42879 (B-75) | Steel Bear 64 | | X | | | X | |
| 21 | DF-42563 (B-75) | Steel Bear 87 | | | X | | | X |
| 22 | DE-35186 (B-76) | Tube Guide 50 | X | | | X | | |
| 23 | DE-35187 (B-76) | Tube Guide 64 | | X | | | X | |
| 24 | DE-35188 (B-76) | Tube Guide 87 | | | X | | | X |
| 25 | DE-21624 (B-77) | Tube Unit | X | X | X | X | X | X |
| 26 | DE-21640 (B-78) | Tube Unit 2 | X | X | X | X | X | X |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 27 | DF-43935 (B-79/B-80) | Ink Tube (50, 64 & 87) | X | X | X | X | X | X |
| 28 | DF-42564 (B-116) | Steel Belt 50 | X | | | X | | |
| 29 | DF-42874 (B-116) | Steel Belt 64 | | X | | | X | |
| 30 | DF-42566 (B-116) | Steel Belt 87 | | | X | | | X |
| 31 | DF-43437 (B-147) | TR Connector | X | X | X | X | X | X |
| 32 | DF-43621 (B-162) | CR Speed Reduction Belt | X | X | X | X | X | X |
| 33 | DR-4014-41609 (B-2007) | E-ring # 1,5 | X | X | X | | | |
| 34 | DR-7032-41990 (B-2008) | E-ring # 2,5 | X | X | X | | | |
| 35 | ME-80303 (B-2005) | Arm Bracket BA | X | X | X | | | |
| 36 | ME-80304 (B-2003) | Pressure Arm BA | X | X | X | | | |
| 37 | ME-80305 (B-2002) | Spring Axis | X | X | X | | | |
| 38 | ME-80306 (B-2006) | Extension Spring D5,6 D0,55 | X | X | X | | | |
| 39 | MY-35600 (B-3000) | Pressure roll assy | | | | X | X | X |
| 40 | MY-80427 (B-3002) | Pressure roller grid assy | | | | X | X | X |

## ***10.4.6. Maintenance Components***

| No. | Service part | Service diagram | F2O – 2 heater | | | F2O – 4 heater | | |
|---|---|---|---|---|---|---|---|---|
| | | | 50 | 64 | 87 | 50 | 64 | 87 |
| 1 | E-GP1574P (F-59) | CR HP Sensor Lever Sensor | X | X | X | X | X | X |
| 2 | DE-35228 (F-52/F-70) | Slide Motor Assy | X | X | X | X | X | X |
| 3 | DF-43437 (F-120) | TR Connector | X | X | X | X | X | X |
| 4 | DF-43637 (F-29) | Cleaner | X | X | X | X | X | X |
| 5 | DF-43699 (F-52) | Wiper Motor Cable Assy | X | X | X | X | X | X |
| 6 | DF-43698 (F-71) | Maintenance Up/Down Cable Assy | X | X | X | X | X | X |
| 7 | DF-43576 (F-60) | Wipe Origin Cable Assy | X | X | X | X | X | X |
| 8 | DF-43577 (F-61) | Maintenance Origin Cable Assy | X | X | X | X | X | X |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 9 | MY-80627 | Maint. Station Assy RH 4 Heads | X | X | | X | X | |
| 10 | MY-80628 | Maint. Station Assy RH 8 Heads | | | X | | | X |
| 11 | MY-80622 | Cap assy 4 heads | X | X | | X | X | |
| 12 | MY-80623 | Cap assy 8 heads | | | X | | | X |

## ***10.4.7. PF Driving Components***

| No. | Service part | Service diagram | F2O – 2 heater | | | F2O – 4 heater | | |
|---|---|---|---|---|---|---|---|---|
| | | | 50 | 64 | 87 | 50 | 64 | 87 |
| 1 | MY-42172 (A-58/59) | PF Scale Assy | X | X | X | X | X | X |
| 2 | MY-43862 (A-64 + A-66) | PF Encoder Assy | X | X | X | X | X | X |
| 3 | MY-42869 (A-80) | PF Motor Assy | X | X | X | X | X | X |
| 4 | MY-43618 (A-52/A-59) | Speed Reduction Pulley Assy | X | X | X | X | X | X |
| 5 | MY-35085 (A-118/119) | Flushing Box Assy | X | X | X | X | X | X |
| 6 | MY-35023 (A-135) | Lever Motor Assy | X | X | X | X | X | X |
| 7 | DF-42468 (A-65) | PF Enc Cable 50 Assy | X | | | X | | |
| 8 | DF-44471 (A-65) | PF Enc Cable 64 Assy | | X | | | X | |
| 9 | DF-44478 (A-65) | PF Enc Cable 87 Assy | | | X | | | X |
| 10 | DF-42846 (A-86) | X Speed Reduction Belt | X | X | X | X | X | X |
| 11 | DF-42491 (A-81) | PF Motor Cable 50 Assy | X | | | X | | |
| 12 | DF-44473 (A-81) | PF Motor Cable 64 Assy | | X | | | X | |
| 13 | DF-44480 (A-81) | PF Motor Cable 87 Assy | | | X | | | X |
| 14 | DF-42486 (A-94) | Vacuum Fan 2 Cable Assy | X | X | X | X | X | X |
| 15 | DF-42487 (A-95) | Vacuum Fan 3 Cable Assy | X | X | X | X | X | X |
| 16 | DF-42488 (A-96) | Vacuum Fan 4 Cable Assy | X | X | X | X | X | X |
| 17 | DF-42489 (A-97) | Vacuum Fan 5 Cable Assy | X | X | | X | X | |
| 18 | DF-42490 | Vacuum Fan 6 Cable Assy | | | X | | | X |
| 19 | DF-44456 (A-105) | P Rear R Sensor Assy | X | X | X | X | X | X |
| 20 | DF-42639 (A-106) | P Rear L Sensor Assy | X | X | | X | X | |
| 21 | DF-44475 | P Rear L Sensor Assy | | | X | | | X |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 22 | EY-25582 (A-2010) | Power Supply 5V/24V | X | X | X | X | X | X |
| 23 | EY-80201 (A-2009) | PCB Contr. Board Heat Syst RH2 | X | X | X | | | |
| 24 | EY-80202 (A-2003) | PCB Powerboard Heat Syst RH2 | X | X | X | | | |
| 25 | EY-80204 | PCB contr. Board Syst RH2 | | | | X | X | X |
| 26 | EY-80205 | PCB Powerboard Heat Syst RH2 | | | | X | X | X |
| 27 | MY-80203 | Paper Guide Front Assy 50 | | | | X | | |
| 28 | MY-80213 | Paper Guide Front Assy 64 | | | | | X | |
| 29 | MY-80223 | Paper Guide Front Assy 87 | | | | | | X |
| 30 | MY-80203J | Paper Guide Front Assy 50 | X | | | | | |
| 31 | MY-80213J | Paper Guide Front Assy 64 | | X | | | | |
| 32 | MY-80223J | Paper Guide Front Assy 87 | | | X | | | |
| 33 | MY-80210 | Paper Guide Rear Assy 50 | | | | X | | |
| 34 | MY-80220 | Paper Guide Rear Assy 64 | | | | | X | |
| 35 | MY-80230 | Paper Guide Rear Assy 87 | | | | | | X |
| 36 | MY-80210J | Paper Guide Rear Assy 50 | X | | | | | |
| 37 | MY-80220J | Paper Guide Rear Assy 64 | | X | | | | |
| 38 | MY-80230J | Paper Guide Rear Assy 87 | | | X | | | |
| 39 | MY-80251 | Fan Part Plate PCB Assy RH 50 | | | | X | | |
| 40 | MY-80261 | Fan Part Plate PCB Assy RH 64 | | | | | X | |
| 41 | MY-80271 | Fan Part Plate PCB Assy RH 87 | | | | | | X |
| 42 | MY-80321 | Print Platform Assy RH2 64" VU | | | | | X | |
| 43 | MY-80322 | Print Platform Assy RH2 50" VU | | | | X | | |
| 44 | MY-80323 | Print Platform Assy RH2 87" VU | | | | | | X |

## ***10.4.8. Paper Guide Front Components***

| No. | Service part | Service diagram | F2O – 2 heater | | | F2O – 4 heater | | |
|---|---|---|---|---|---|---|---|---|
| | | | 50 | 64 | 87 | 50 | 64 | 87 |
| 1 | EY-80333 | Post Fixer C RH VU 64 | | | | | X | |
| 2 | EY-80341 | Dryer D1 RH VU 64 | | | | | X | |
| 3 | EY-80342 | Dryer D2 RH VU 64 | | | | | X | |
| 4 | EY-80343 | Post Fixer C RH VU 50 | | | | X | | |
| 5 | EY-80346 | Dryer D1 RH VU 50 | | | | X | | |
| 6 | EY-80347 | Dryer D2 RH VU 50 | | | | X | | |
| 7 | EY-80353 | Post Fixer C RH VU 87 | | | | | | X |
| 8 | EY-80356 | Dryer D1 RH VU 87 | | | | | | X |
| 9 | EY-80357 | Dryer D2 RH VU 87 | | | | | | X |
| 10 | ME-80310 | Sensor Insul. Patch RJ-8250 | | | | X | X | X |
| 11 | MY-80203 | Paper Guide Front Assy 50 | | | | X | | |
| 12 | MY-80213 | Paper Guide Front Assy 64 | | | | | X | |
| 13 | MY-80223 | Paper Guide Front Assy 87 | | | | | | X |
| 14 | MY-80203J | Paper Guide Front Assy 50 | X | | | | | |
| 15 | MY-80213J | Paper Guide Front Assy 64 | | X | | | | |
| 16 | MY-80223J | Paper Guide Front Assy 87 | | | X | | | |
| 17 | EY-80236 | Heat Strip Assy front 1 RH 50 | X | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 18 | EY-80216 | Heat Strip Assy front 1 RH 64 | | X | | | | |
| 19 | EY-80226 | Heat Strip Assy front 1 RH 87 | | | X | | | |
| 20 | EY-80237 | Heat Strip Assy front 2 RH 50 | X | | | | | |
| 21 | EY-80217 | Heat Strip Assy front 2 RH 64 | | X | | | | |
| 22 | EY-80227 | Heat Strip Assy front 2 RH 87 | | | X | | | |

## ***10.4.9. Paper Guide Rear components***

| No. | Service part | Service diagram | F2O – 2 heater | | | F2O – 4 heater | | |
|---|---|---|---|---|---|---|---|---|
| | | | 50 | 64 | 87 | 50 | 64 | 87 |
| 1 | EY-80218 | Heat Strip Assy Rear RH 64" | | X | | | | |
| 2 | EY-80228 | Heat Strip Assy Rear RH 87" | X | | | | | |
| 3 | EY-80238 | Heat Strip Assy Rear RH 50" | | | X | | | |
| 4 | EY-80340 | Heater A RH VU 64" | | | | | X | |
| 5 | EY-80345 | Heater A RH VU 50" | | | | X | | |
| 6 | EY-80355 | Heater A RH VU 87" | | | | | | X |
| 7 | ME-24134 | Press Plate Rvs | X | X | X | X | X | X |
| 8 | MY-80210J | Paper Guide Rear Assy 50 | X | | | | | |
| 9 | MY-80220J | Paper Guide Rear Assy 64 | | X | | | | |
| 10 | MY-80230J | Paper Guide Rear Assy 87 | | | X | | | |
| 11 | MY-80210 | Paper Guide Rear Assy 50 | | | | X | | |
| 12 | MY-80220 | Paper Guide Rear Assy 64 | | | | | X | |
| 13 | MY-80230 | Paper Guide Rear Assy 87 | | | | | | X |

## ***10.4.10. Panel components***

| No. | Service part | Service diagram | F2O – 2 heater | | | F2O – 4 heater | | |
|---|---|---|---|---|---|---|---|---|
| | | | 50 | 64 | 87 | 50 | 64 | 87 |
| 1 | DE-35092 | Panel Board Assy | X | X | X | X | X | X |
| 2 | DF-42499 | Panel Tape Cable | X | X | X | X | X | X |
| 3 | LB-10820 | Panel Sheet Rockhopper | X | X | X | X | X | X |

## ***10.4.11. Leg Section***

| No. | Service part | Service diagram | F2O – 2 heater | | | F2O – 4 heater | | |
|---|---|---|---|---|---|---|---|---|
| | | | 50 | 64 | 87 | 50 | 64 | 87 |
| 1 | MY-42926 | Waste Fluid Bottle Assy | X | X | X | | | |
| 2 | DE-35131 | Foot Switch | X | X | X | X | X | X |
| 3 | ME-18280 | Silicone Tube 4x2mm | | | | X | X | X |
| 4 | ME-80385 | Silicone Waste Ink Tube 14x10mm | | | | X | X | X |
| 5 | MY-80399 | Waste Bottle Assy RH2 VU | | | | X | X | X |
| 6 | DF-43780 | Waste bottle sensor | X | X | X | | | |
| 7 | MK-24211 | Waste bottle sensor | | | | X | X | X |

## 10.4.12. Pump Components

| No. | Service part | Service diagram | F2O – 2 heater | | | F2O – 4 heater | | |
|---|---|---|---|---|---|---|---|---|
| | | | 50 | 64 | 87 | 50 | 64 | 87 |
| 1 | MY-21735 | Pump Assy 50 - 64 | X | X | | | | |
| 2 | MY-11641 | Pump Assy 87 | | | X | | | |
| 3 | DE-35385 | Pump Motor Assy | X | X | X | X | X | X |
| 4 | DF-43437 | TR Connector | X | X | X | X | X | X |
| 5 | MY-41405 | Pump Assembly | X | X | X | X | X | X |
| 6 | DF-43330 | Pump Motor Cable 1 | X | X | X | X | X | X |
| 7 | DF-43437 | Pump Motor Cable 2 | X | X | X | X | X | X |
| 8 | ME-18280 | Silicone Tube 4x2mm | | | | X | X | X |
| 9 | MY-80372 | Pump Assy 4 Heads RH2 VU | | | | X | X | X |
| 10 | MY-80374 | Pump Assy 8 Heads RH2 VU | | | | X | X | X |

## 10.4.13. Scroller L Components

| No. | Service part | Service diagram | F2O – 2 heater | | | F2O – 4 heater | | |
|---|---|---|---|---|---|---|---|---|
| | | | 50 | 64 | 87 | 50 | 64 | 87 |
| 1 | DF-42768 | Roller 1 (K-25) | X | X | X | X | X | X |
| 2 | MY-11641L | Scroller Support L assy | X | X | X | X | X | X |

## 10.4.14. Scroller R Components

| No. | Service part | Service diagram | F2O – 2 heater | | | F2O – 4 heater | | |
|---|---|---|---|---|---|---|---|---|
| | | | 50 | 64 | 87 | 50 | 64 | 87 |
| 1 | DF-42766 (L-20) | Pressure Roller | X | X | X | X | X | X |
| 2 | DF-42768 (L-24) | Roller 1 | X | X | X | X | X | X |
| 3 | DF-42769 (L-25) | Roller 2 | X | X | X | X | X | X |
| 4 | MY-11641R | Scroller Support R Assy | X | X | X | X | X | X |
| 5 | MY-42834 | Scroller bar assy 50 | X | | | X | | |
| 6 | MY-42835 | Scroller bar assy 64 | | X | | | X | |
| 7 | MY-42836 | Scroller bar assy 87 | | | X | | | X |

## 10.4.15. Take-up

| No. | Service part | Service diagram | F2O – 2 heater | | | F2O – 4 heater | | |
|---|---|---|---|---|---|---|---|---|
| | | | 50 | 64 | 87 | 50 | 64 | 87 |
| 1 | MY-42936 (N-16 / N-18) | Pressure arm take-up | X | X | X | X | X | X |
| 2 | WN-4L940 (N32) | Geared motor | X | X | X | X | X | X |
| 3 | WN-4L487 (N-47) | Limiter gear | X | X | X | X | X | X |
| 4 | MY-80745 (N-48) | Mini keeper assy | X | X | X | X | X | X |
| 5 | DF-42839 (N-62) | Drive Wheel | X | X | X | X | X | X |
| 6 | MY-35470 (N-98/N-100) | Take-up Scroller bar holder 64 | X | X | | X | X | |
| 7 | MY-21753 | Take-up Scroller bar holder 64 | | | X | | | X |
| 8 | DF-43386 (N-104) | Take-up sensor assy | X | X | X | X | X | X |
| 9 | DF-41130 (N-131) | Switch Panel | X | X | X | X | X | X |
| 10 | EY-80504 (N-133) | Control board assy | X | X | X | X | X | X |
| 11 | DE-35318 (N-135) | AC cable | X | X | X | X | X | X |
| 12 | E-ZWS30-24/3 (N-137) | Power Supply Assy | X | X | X | X | X | X |
| 13 | DF-43401 (N-139) | DC – cable Assy | X | X | X | X | X | X |
| 14 | DF-41126 (N-141) | Sensor relay cable | X | X | X | X | X | X |
| 15 | DF-44052 (N-144) | Geared Motor Ext. Cable Assy | X | X | X | X | X | X |
| 16 | DF-42843 (N-100) | Roller A | X | X | X | X | X | X |

## 10.4.16. Fan Part Plate PCB

| No. | Service part | Service diagram | F2O – 2 heater | | | F2O – 4 heater | | |
|---|---|---|---|---|---|---|---|---|
| | | | 50 | 64 | 87 | 50 | 64 | 87 |
| 1 | EY-25582 (4) | Power Supply 5V/24V - 6a/20 UI | X | X | X | X | X | X |
| 2 | EY-80204 (6) | PCB Control Board Assy RHRJ8 | | | | X | X | X |
| 3 | EY-80205 (7) | PCB Heater Board Assy RHRJ8 | | | | X | X | X |
| 4 | EY-80201 | PCB Control Board Heat Syst RH | X | X | X | | | |
| 5 | EY-80202 | PCB Heater Board Assy RH | X | X | X | | | |

| No. | Service part | Service diagram | F2O – 2 heater | | | F2O – 4 heater | | |
|---|---|---|---|---|---|---|---|---|
| | | | 50 | 64 | 87 | 50 | 64 | 87 |
| 1 | AP-51210 | EPDM Insulation Tape 25mm 4mm | | | | X | X | X |
| 2 | EY-80338 | Fixer B1 RH VU 64" | | | | | X | |
| 3 | EY-80339 | Fixer B2 RH VU 64" | | | | | X | |
| 4 | EY-80348 | Fixer B1 RH VU 50" | | | | X | | |
| 5 | EY-80349 | Fixer B2 RH VU 50" | | | | X | | |
| 6 | EY-80358 | Fixer B1 RH VU 87" | | | | | | X |
| 7 | EY-80359 | Fixer B2 RH VU 87" | | | | | | X |

## ***10.4.18. Waste bottle***

| No. | Service part | Service diagram | F2O – 2 heater | | | F2O – 4 heater | | |
|---|---|---|---|---|---|---|---|---|
| | | | 50 | 64 | 87 | 50 | 64 | 87 |
| 1 | JD-42054-2 | Cleaning Bottle 2l | | | | X | X | X |
| 2 | MK-24211P | Waste Ink Sensor RH Li | | | | X | X | X |
| 3 | MY-80399 | Waste Bottle Assy RH2 VU | | | | X | X | X |